

# WORLDWIDE BUOY TECHNOLOGY SURVEY

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## FINAL REPORT

## VOLUME II: APPENDIX B

### BUOY RECORDS

### BOOK 1: AUSTRALIA - GERMANY

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## 1.0 INTRODUCTION

### 1.1 Background

→ The Marine Aids to Navigation (ATON) System of the United States is an extensive and comprehensive array of devices external to a vessel. It is intended to assist a navigator in determining his position, plotting a safe course, identifying obstructions to navigation, and to promote safe and economic movement of commercial traffic. The United States Coast Guard (USCG) operates and administers this system which serves the needs of and benefits the maritime commerce, the general boating public and the armed forces. A subgroup of this system is the Short Range Aids (SRA) to navigation system including navigational devices within visual, audible, radar or low power radiobeacon range. ]

In order to research the potential technologies which could advance the state of the art in buoys as aids to navigation, the USCG has initiated the "New Buoy Systems" project. The Buoy Technology Survey is the first step in this new project with the purpose of conducting an overall technology assessment of buoy systems. This is to be accomplished by the following three tasks:

- TASK A - Review of the research and development efforts by the USCG on aid to navigation buoy development since 1962.
- TASK B - Worldwide survey of existing buoy technology and compilation of survey data in a computer database.
- TASK C - Formulation of recommendations for the development of improved aid to navigation buoys for the USCG.

The first task, "USCG Buoy Development Review", has been completed and results presented in a final report.<sup>1</sup>

The current report is concerned with Task B of the project; it presents the results of a worldwide buoy technology survey and of the development of a computerized "Buoy Technology Information System (BTIS)".

### 1.2 Objective

→ The main concern of the overall project is the buoy platform and excludes the direct and detailed consideration of such related matters as mooring systems, signalling devices, and the much broader consideration of SRA type, arrangement and effectiveness. The fact that the mooring system and signalling devices are sometimes integrated with the platform has resulted in

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<sup>1</sup> J. Daidola, N. Basar, M. Johnson and R. Walker, "Buoy Technology Survey - USCG Buoy Development Review," USCG R&D Center, Final Report, October 1990.

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# Technical Report Documentation Page

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15. Supplementary Notes REPORT CONSISTS OF THREE VOLUMES: VOLUME I CONTAINS MAIN TEXT OF REPORT PLUS APPENDICES A, D AND E; VOLUME II CONTAINS BUOY RECORDS IN TWO BOOKS; VOLUME III CONTAINS BUOY ILLUSTRATIONS.					
16. Abstract <p>THIS REPORT PRESENTS THE RESULTS OF THE SECOND PART (TASK B) OF THE U.S.C.G. project "BUOY TECHNOLOGY SURVEY". PERSONAL INTERVIEWS WERE CONDUCTED WITH THE NAVIGATION AUTHORITIES AND BUOY MANUFACTURERS AND DESIGNERS IN CANADA, DENMARK, ENGLAND, FINLAND, FRANCE, GERMANY, JAPAN, THE NETHERLANDS AND NORWAY. NAVIGATION AUTHORITIES AND MANUFACTURERS FROM TWELVE ADDITIONAL COUNTRIES WERE ALSO CONTACTED DURING THE 12TH CONFERENCE OF THE INTERNATIONAL ASSOCIATION OF LIGHTHOUSE AUTHORITIES IN JUNE 1990. RELEVANT DATA WERE OBTAINED FROM THESE SOURCES ON THE PHYSICAL, OPERATIONAL AND PERFORMANCE CHARACTERISTICS OF THEIR FLOATING AIDS TO NAVIGATION. A COMPUTER DATABASE WAS DEVELOPED FOR STORING THE DATA FROM ALL SOURCES CITED AS WELL AS THE DATA RECEIVED DURING TASK A OF THIS PROJECT FROM THE U.S. COAST GUARD AND U.S. MANUFACTURERS. THE DATABASE (BUOY TECHNOLOGY INFORMATION SYSTEM - BTIS) IS BOTH RELATIONAL AND RETRIEVABLE AND IS INTENDED FOR USE BY THE U.S. COAST GUARD. A HARD COPY OF BTIS IS CONTAINED IN APPENDIX B OF THIS REPORT AND IS SUPPORTED BY ILLUSTRATIONS OF ALL BUOYS IN APPENDIX C.</p> <p>THE RESULTS OF ALL INTERVIEWS AND THE DATA OBTAINED ARE ANALYZED AND TRENDS ARE NOTED WITH REGARD TO IDENTIFICATION OF SIGNIFICANT AREAS FOR DEVELOPMENT OF AID TO NAVIGATION BUOYS FOR USE IN THE NEXT TASK (TASK C: RECOMMENDATIONS FOR DEVELOPMENT OF BUOY TECHNOLOGIES).</p>					
17. Key Words FLOATING AIDS BUOYS ARTICULATED BEACONS NAVIGATION AUTHORITIES WORLDWIDE MFG. BTIS DATABASE				18. Distribution Statement DOCUMENT IS AVAILABLE TO THE U. S. PUBLIC THROUGH THE NATIONAL TECHNICAL INFORMATION SERVICE SPRINGFIELD, VA 22161	
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				22. Price	

# METRIC CONVERSION FACTORS

## Approximate Conversions to Metric Measures

Symbol When You Know Multiply By To Find Symbol

LENGTH	
inches	* 2.5
feet	30
yards	0.9
miles	1.6
AREA	
square inches	6.5
square feet	0.09
square yards	0.8
square miles	2.6
acres	0.4
centimeters	cm
meters	m
kilometers	km
square centimeters	cm <sup>2</sup>
square meters	m <sup>2</sup>
square kilometers	km <sup>2</sup>
hectares	ha

### MASS (weight)

ounces	28
pounds	0.45
short tons (2000 lb.)	0.9
grams	g
kilograms	kg
tonnes	t

### VOLUME

teaspoons	5
tablespoons	15
fluid ounces	30
cups	0.24
pints	0.47
quarts	0.95
gallons	3.8
cubic feet	0.03
cubic yards	0.76
milliliters	ml
liters	l
cubic meters	m <sup>3</sup>

### TEMPERATURE (exact)

Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature
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## Approximate Conversions from Metric Measures

Symbol When You Know Multiply By To Find Symbol

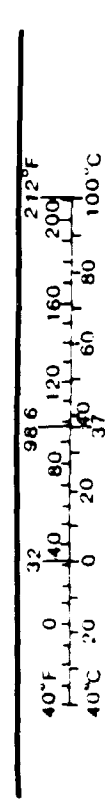
LENGTH	
millimeters	0.04
centimeters	0.4
meters	3.3
kilometers	0.6
inches	in
feet	ft
yards	yd
miles	mi
AREA	
square centimeters	0.16
square meters	1.2
square kilometers	0.4
hectares (10,000 m <sup>2</sup> )	2.5
square inches	in <sup>2</sup>
square yards	yd <sup>2</sup>
square miles	mi <sup>2</sup>
acres	ac
MASS (weight)	
grams	0.035
kilograms	2.2
tonnes (1000 kg)	1.1
ounces	oz
pounds	lb
short tons	st

### VOLUME

milliliters	0.03
liters	0.125
fluid ounces	2.1
pints	1.06
quarts	0.26
gallons	3.5
cubic meters	1.3
cubic yards	yd <sup>3</sup>
fluid ounces	fl oz
cups	c
pints	pt
quarts	qt
gallons	gal
cubic feet	ft <sup>3</sup>
cubic yards	yd <sup>3</sup>

### TEMPERATURE (exact)

Celsius temperature	9/5 (then add 32)	Fahrenheit temperature
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Volume II Appendix B Book I Contents

Buoy Name	Country of Use	Drawing Reference
8 x 28 LIGHTED BUOY	Australia	Aust-1
FA-1001 1.4M LR	Canada	Canada 1 & 4
FA-1004 1.3m LR	Canada	Canada 1 & 5
FA-1007 2.9m LBR	Canada	Canada 1 & 6
FA-1010 2.9m LWR	Canada	Canada 1 & 7
FA-1015 3.0m SCOW	Canada	Canada 1 & 8
FA-1017 1.8m LR	Canada	Canada 1 & 9
FA-1019 1.5m DISCUS	Canada	Canada 1 & 10
FA-2001 0.8m Coastal Can	Canada	Canada 2 & 11
FA-2002 0.8m Coastal Conical	Canada	Canada 2 & 12
FA-2003 1.2m Coastal Can	Canada	Canada 2 & 13
FA-2004 1.2m Coastal Conical	Canada	Canada 2
FA-2005 1.6m Coastal Can	Canada	Canada 2 & 14
FA-2006 1.6m Coastal Conical	Canada	Canada 2 & 15
FA-2007 2.0m Coastal Conical	Canada	Canada 2 & 16
FA-2008 0.9m River Conical	Canada	Canada 2 & 17
FA-2009 0.9m River Can	Canada	Canada 2 & 18
FA-2010 1.2m River Conical	Canada	Canada 2 & 19
FA-2011 1.2m River Can	Canada	Canada 2 & 20
FA-2012 0.6m Mackenzie River-C	Canada	Canada 2 & 21
FA-2013 0.6m Mackenzie River-N	Canada	Canada 2 & 22
FA-2014 Canol Type Boat	Canada	Canada 2 & 25
FA-2015 0.4m Mackenzie River-C	Canada	Canada 2 & 23
FA-2016 0.4m Mackenzie River-N	Canada	Canada 2 & 24
FA-3001 1.0m Ice, Can	Canada	Canada 3 & 26
FA-3002 1.0m Ice, Conical	Canada	Canada 3 & 27
FA-3003 0.7m Ice, Can	Canada	Canada 3 & 28
FA-3004 0.7m Ice, Conical	Canada	Canada 3 & 29
FA-3005 0.6m SPAR	Canada	Canada 3 & 30
FA-3006 0.6m SPAR, (Short)	Canada	Canada 3 & 31
FA-3007 0.3m SPAR, Ottawa Rvr	Canada	Canada 3 & 32
FA-3008 Vari. Buoyancy FRP SPAR	Canada	Canada 3 & 33
Integrated Modular Buoy	Denmark	Denmark - 24
Jernvager I Type C Unlighted	Denmark	Denmark 17
Jernvager I Type K Unlighted	Denmark	Denmark 18
Jernvager Type S Unlighted	Denmark	Denmark 19
Lighted Racon Buoy Model 2	Denmark	Denmark 16
Type 11, Cylind. Top, Lighted	Denmark	Denmark 10
Type 12, Conical Top, Lighted	Denmark	Denmark 1
Type 13, Cylind. Top, Lighted	Denmark	Denmark 11
Type 14, Conical Top, Lighted	Denmark	Denmark 2
Type 15, Cylind. Top, Lighted	Denmark	Denmark 15
Type 16, Conical Top, Lighted	Denmark	Denmark 8
Type 21, Cylind. Top, Lighted	Denmark	Denmark 12
Type 22, Conical Top, Lighted	Denmark	Denmark 3
Type 25, Cylind. Top, Lighted	Denmark	Denmark 14
Type 26, Conical Top, Lighted	Denmark	Denmark 5
Type 31, Cylind. Top, Lighted	Denmark	Denmark 13
Type 32 Conical Top, Lighted	Denmark	Denmark 4
Type 43 Ocean Conical, Lighted	Denmark	Denmark 6
Type 52 Ocean Conical, Lighted	Denmark	Denmark 7
Type 62 Conical, Lighted	Denmark	Denmark 9
Vager I Unlighted	Denmark	Denmark 20

Volume II Appendix B Book I Contents (cont.)

Buoy Name	Country of Use	Drawing Reference
Vager II Unlighted	Denmark	Denmark 21
Vager III Unlighted	Denmark	Denmark 22
Vager IV Unlighted	Denmark	Denmark 23
9'0" General Purpose Unlighted	England	England 12
Cardinal Class I, 10x50 LWBR	England	England 5
Cardinal Class I, 10x51 LWBR	England	England 4
Cardinal Class II Pillar Mk. I	England	England 7
Class 1 Can	England	England 15
Class 1 Conical	England	England 15
Class 1 Spherical	England	England 15
Class 2 Can	England	England 15
Class 2 Conical	England	England 15
Class 2 Spherical	England	England 15
Class 3 Can	England	England 15
Class 3 Conical	England	England 15
Class 3 Spherical	England	England 15
Class 4 Can	England	England 15
Class 4 Conical	England	England 15
Class 4 Spherical	England	England 15
Class 5 Can	England	England 15
Class 5 Conical	England	England 15
Class 5 Spherical	England	England 15
Class V conical, lighted	England	England 14
High Focal Plane, 10x39 LWR	England	England 3
High Focal Plane, 10x43 LWR	England	England 2
High Focal Plane, 10x44 LWR	England	England 1
Keel Type Auto CO2 Bell, Light	England	England 10
Keel Type Lighted Gas	England	England 8
Lighted Vessel Watch	England	England 16
Short Pillar Lighted Acetylene	England	England 6
Small Electric Lighted, "Bury"	England	England 13
Special Can	England	England 16
Spherical Mooring	England	England 16
Spherical Top	England	England 16
Standard GRP 3 Meter Lighted.	England	England 11
Std 4 Pocket Lighted Acetylene	England	England 9
Wreck Nun	England	England 16
950 Series Marker (3.1x5.8 L)	England MFG 1	England MFG 1-161-16
EF120L Marker Buoy (3.9x9 L)	England MFG 1	England MFG 1-16 1-2
EF15L Class V (4.9x10 LR)	England MFG 1	England MFG 1-16 1-3
EF15P Class V (4.9x14 LR)	England MFG 1	England MFG 1-161-4
EF18L Class IV (5.9x13 LR)	England MFG 1	England MFG 1-161-5
EF18P Class IV (5.9x18 LR)	England MFG 1	England MFG 1-161-6
EF20L (6.6x13 LR)	England MFG 1	England MFG 1-161-7
EF20P (6.6x18 LR)	England MFG 1	England MFG 1-16 1-8
EF25L Class III (8.2x16 LR)	England MFG 1	England MFG 1-161-9
EF25P Class III (8.2x25 LR)	England MFG 1	England MFG 1-161-10
EF30L Class II (9.8x18 LR)	England MFG 1	England MFG 1-161-11
EF30P Class II (9.8x27 LR)	England MFG 1	England MFG 1-161-12
EF36L Class I (11.8x18 LR)	England MFG 1	England MFG 1-161-13
EF36P Class I (11.8x27 LR)	England MFG 1	England MFG 1-161-14
L11 (3.6 x 6.7 LR)	England MFG 1	England MFG 1-161-15
L16 (5.3x9.2 LR)	England MFG 1	England MFG 1-161-16

Buoy Name	Country of Use	Drawing Reference
L21 (6.9x12 LR)	England MFG 1	England MFG 1-1&1-20
L40 (13.1x18 LR)	England MFG 1	England MFG 1-1&1-22
P11 (3.6x10 LR)	England MFG 1	England MFG 1-1&1-17
P16 (5.3x13 LR)	England MFG 1	England MFG 1-1&1-19
P21 (6.9x17 LR)	England MFG 1	England MFG 1-1&1-21
P40 (13.1x30 LR)	England MFG 1	England MFG 1-1&1-23
SG2 Spar (1.3x20 LRS)	England MFG 1	England MFG 1-1&1-24
SG7 Spar (1.3x17 LRS)	England MFG 1	England MFG 1-1&1-24
Class II, Reinf. Plastic Struc	England MFG 2	England MFG 2-1
Class III, Reinf. Plastic Str.	England MFG 2	England MFG 2-1
Class V, Reinf. Plastic Struct	England MFG 2	England MFG 2-1
Class VI, Conical	England MFG 2	England MFG 2-1
Class VI, Dished	England MFG 2	England MFG 2-1
Reinforced Plastic Struct-SPAR	England MFG 2	England MFG 2-1
BC-21 Catamaran (6.6x9.8 LR)	England MFG 3	England MFG 3-1 63-2
BC-22 Catamaran (9.0x16 LR)	England MFG 3	England MFG 3-1 63-2
BS-13 (3.3x5.8 LR)	England MFG 3	England MFG 3-1 63-3
BS-14 (3.6x5.7 LR)	England MFG 3	England MFG 3-1 63-3
BS-16 (5.3x8.1 LR)	England MFG 3	England MFG 3-1 63-3
BS-1830 (5.9x17 LR)	England MFG 3	England MFG 3-1 63-4
BS-2230 (7.2x17 LR)	England MFG 3	England MFG 3-1 63-4
BS-2240 (7.2x21 LR)	England MFG 3	England MFG 3-1 63-4
BS-2630 (8.5x17 LR)	England MFG 3	England MFG 3-1 63-4
BS-2640 (8.5x20 LR)	England MFG 3	England MFG 3-1 63-4
BS-2650 (8.5x24 LR)	England MFG 3	England MFG 3-1 63-4
BS-3030 (9.8x17 LR)	England MFG 3	England MFG 3-1 63-4
BS-3040 (9.8x20 LR)	England MFG 3	England MFG 3-1 63-4
BS-3050 (9.8x24 LR)	England MFG 3	England MFG 3-1 63-4
BS-41 MKII (7.6x21 LR)	England MFG 3	England MFG 3-1 63-3
BT-1115 (3.6x10 LR)	England MFG 3	England MFG 3-1 63-5
BT-1125 (3.6x13 LR)	England MFG 3	England MFG 3-1 63-5
BT-1830 (5.9x23 LR)	England MFG 3	England MFG 3-1 63-5
BT-1840 (5.9x26 LR)	England MFG 3	England MFG 3-1 63-5
BT-2240 (7.2x25 LR)	England MFG 3	England MFG 3-1 63-5
BT-2250 (7.2x28 LR)	England MFG 3	England MFG 3-1 63-5
BT-2640 (8.5x25 LR)	England MFG 3	England MFG 3-1 63-5
BT-2650 (8.5x28 LR)	England MFG 3	England MFG 3-1 63-5
BT-2665 (8.5x35 LR)	England MFG 3	England MFG 3-1 63-5
BT-3040 (9.8x25 LR)	England MFG 3	England MFG 3-1 63-5
BT-3050 (9.8x28 LR)	England MFG 3	England MFG 3-1 63-5
BT-3065 (9.8x33 LR)	England MFG 3	England MFG 3-1 63-5
ELASTOMER "SOFT" BUOY	England Mfg-4	England Mfg 1-1
1.0m x 10m Plastic Pillar	Finland	Finland 1, 4 6 5
1.0m x 14m Plastic Pillar	Finland	Finland 1
100mm x 6m Plastic Spar	Finland	Finland 1, 5 6 5
225mm x 6m Lighted Plast. Spar	Finland	Finland 1, 5 6 5
225mm x 7m Plastic Spar	Finland	Finland 1, 5 6 5
3m x 17m Steel Ice Buoy	Finland	Finland 1
50 110 Plastic Spar Unlighted	Finland	Finland 1 6 5
500mm x 6m Plastic Pillar	Finland	Finland 1, 4 6 5
JPK 130-1050 Steel Ice Buoy	Finland	Finland 1, 2 and 3
JPK 130-550 Steel Ice Buoy	Finland	Finland 1 4 2
90 160 Plastic Spar	Finland MFG-1	Finland 1 4 5

Volume II Appendix B Book I Contents (cont.)

Buoy Name	Country of Use	Drawing Reference
12 M3 Lighted Buoy With Tail	France	France - 12
18 M3 Lighted Buoy With Tail	France	France - 13
7.5 M3 Lighted Buoy With Tail	France	France - 11
DELPHINE Flat Bottom Lighted	France	France-14
DELPHINE Improved Stability	France	France-15
Flat Bottom Lighted 5 cu. m.	France	France - 2
Intermediate Buoy-Lighted	France	France - 1
Lighted Marina Buoy	France	France-10
Marina Buoy-Cardinal Unlighted	France	France-10
Marina Buoy-Lateral Unlighted	France	France-10
NOLWEN Flat Bottom Form Tower	France	France - 5
NOLWEN Flat Bottom Lattice Twr	France	France - 4
NOLWEN II Type Lighted Buoy	France	France - 6
NOLWEN Tail-Tube Solar	France	France - 3
Polyester Buoy	France	France-7, 8, 9
ARTEMIS Lighted Buoy	France MFG-1	France MFG 1-1
DAPHNE Lighted Buoy	France MFG-1	France MFG 1-2
Inland lighted STD steel	Germany	Germany-9
Inland Unlighted STD Steel	Germany	Germany-10
Leuchttonne 61	Germany	Germany-3
Leuchttonne 61 with reflector	Germany	Germany-4
Leuchttonne 72	Germany	German-5
Leuchttonne 81 Emden	Germany	Germany-11
Leuchttonne 81 standard	Germany	Germany-6
Leuchttonne 81-High Tower I	Germany	Germany-8
Leuchttonne 81-High Tower II	Germany	Germany-7
Modular Buoy	Germany	Germany - 12
T-86 Conical Buoy-Unlighted.	Germany	Germany-2
T-86 Spar Buoy-Unlighted	Germany	Germany-1

DISTRIBUTION OF BUOY RECORDS IN BTIS DATABASE

BY COUNTRIES AND MANUFACTURERS

Country	Authority/Mfg.	No. of Records	Name of Source
Australia	Authority	1	Dept. of Trans. & Comm'n
Canada	Authority	31	Canadian Coast Guard
China (P.R. of)	Manufacturer 1	2	Shanghai Nav Aids Fact.
Denmark	Authority	24	Farvandsvaesenet
England	Authority	34	Trinity House
	Manufacturer 1	24	Balmoral
	Manufacturer 2	6	Reinforced Plastic Str.
	Manufacturer 3	27	Pharos Marine
	Manufacturer 4	1	Hippo Marine
Finland	Authority	10	Merenkulkuhallitus
	Manufacturer 1	1	KWM Pipe
France	Authority	15	Phares & Balises
	Manufacturer 1	2	Gisman
Germany	Authority	12	Seezeichenversuchsfeld
	Manufacturer 1	12	Pintsch Benag
India	Manufacturer 1	4	ANA Nav Aids
Italy	Manufacturer 1	2	Resinex Offshore
	Manufacturer 2	1	Floatex

DISTRIBUTION OF BUOY RECORDS IN BTIS DATABASE

BY COUNTRIES AND MANUFACTURERS

Country	Authority/Mfg.	No. of Records	Name of Source
Japan	Authority	15	Maritime Safety Agency
	Manufacturer 1	5	Nippon Kogi Kogyo
	Manufacturer 2	19	Ryoskuseisha
	Manufacturer 3	21	Zeni Lite Buoy
The Netherlands	Authority	2	DGSM
	Manufacturer 1	5	Stromag/P. Bamag
	Manufacturer 2	1	All Marine
Norway	Authority	6	Kystdirektoratet
	Manufacturer 1	11	Ticon Plast
South Africa	Authority	1	S.A. Harbors Authority
U.S.A.	Authority	51	U.S. Coast Guard
	Manufacturer 1	11	Tideland Signals
	Manufacturer 2	19	Automatic Power
	Manufacturer 3	1	Gilman Corp.
	Manufacturer 4	3	Urethane Technologies
	Manufacturer 5	1	Seaward International
Total Number of Records in BTIS Database		381	



## GENERAL INFORMATION

Name of Buoy: 8 x 25 LIGHTED BUOY

Country of Use: Australia

Function: For use in coastal waterways.

Date Of Last Update For This Record: 01/23/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,600 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 27.21 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 8.00 Ft.

Freeboard No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Disc

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Solar panels & battery

Lighting Equipment: Electric lantern

Sound Equipment:

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.125 In.  
Length : 27.0 Ft.

Mooring Line: Size: 1.625 In.  
Type: Short link chain

Sinker Size: 8,000 Lbs.

Topmark Type:

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:        0 Mos.

Maintenance Notes:

Special Features:

Tower and tail tube assemblies are bolted to the hull to make them easier to transport.

Stability Notes:

Based on USCG 8x26 buoy but tail tube is extended by 2 ft. to lower the CG to improve stability.

General Notes

Manufacturers:

Source of Design:                Dept of Transp. & Comm

Drawing Reference:              Aust-1

GENERAL INFORMATION

Name of Buoy: FA-1001 1.4M LR

Country of Use: Canada

Function: Lighted buoy with variable counter weights for wide range of water depths.

For exposed to partially protected fresh water, rivers.

Date Of Last Update For This Record: 01/24/91

PHYSICAL CHARACTERISTICS

Buoy Weight: 3,876 Lbs.

Buoy Draft: 7.28 Ft.

Overall Buoy Length: 17.25 Ft.

Focal Height of Light: 9.31 Ft.

Buoy Beam or Diameter: 4.59 Ft.

Freeboard      No Mooring: 2.57 Ft.  
Minimum: 0.98 Ft.

Pounds Per Inch Immersion: 90 Lbs.

Metacentric Height: 0.37 Ft.

Reserve Buoyancy: 1,050 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Variable External

# RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: 62-12 batteries, (2 pockets)

Lighting Equipment: Electric lantern, 155 or 200mm

Sound Equipment: none

Other Payload: Radar reflector or RACON

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.125 In.  
Length : 13.1 Ft.

Mooring Line: Size: 1.125 In.  
Type: Steel Chain

Sinker Size: 2,646 Lbs.

Topmark Type: Cardinal, optional

Number of Padeyes: 4

# OPERATING CHARACTERISTICS

Operating Environment: SM, rivers

Nominal Visual Range of Daymark: 1.9 Nmi.

Radar Range: 3.2 Nmi.

Maximum Current: 3.0 Kts.

Mooring Depth Minimum: 13 Ft.  
Maximum: 280 Ft.

Reflective Material Type: 4 Retroreflective Ident. Plates

# ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                          Preparation:            \$0  
                          Monthly Servicing:    \$0

Service Life:                    25.0 Yrs.

Maintenance Interval:        0 Mos.

## Maintenance Notes:

Bushings in mooring lugs are designed to last at least 3 years.

## Special Features:

## Stability Notes:

In tides and winds to 38 knots its stability is good. In ice floes and under superstructure icing conditions its response is poor. Performance good in waves to 3' and breakers to 7'.

## General Notes

Replaces buoy No. CR-15006

Radar reflector is omnidirectional.

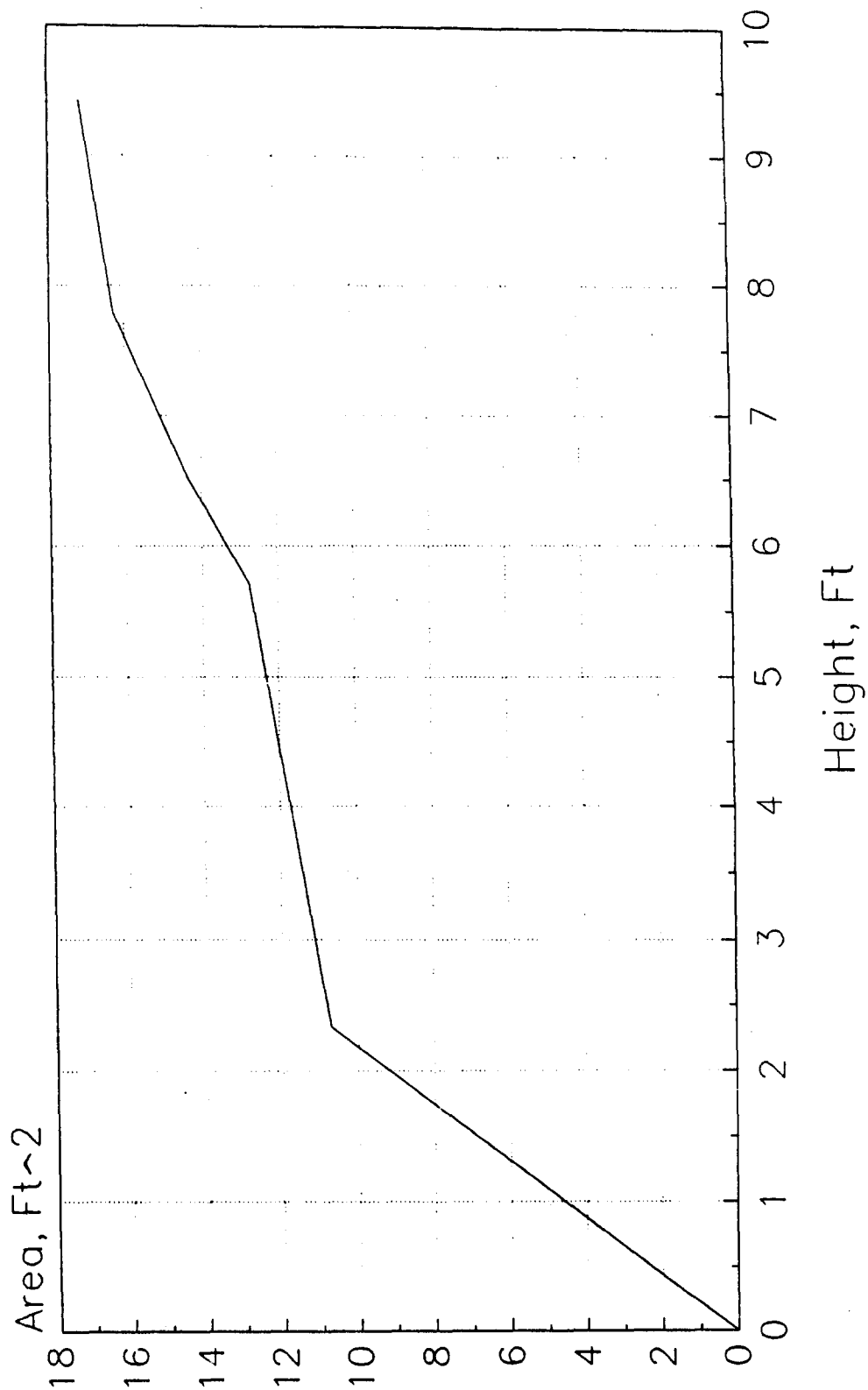
Manufacturers:                    Georgetown SY

Source of Design:                Canadian Coast Guard

Drawing Reference:                Canada 1 & 4

# FA-1001 1.4m LR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-1004 1.8m LR

Country of Use: Canada

Function: Lighted Buoy intended for seasonal (ie. summer) operation, having a small battery storage capacity.

For exposed to partially protected salt & fresh water.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,044 Lbs.

Buoy Draft: 7.04 Ft.

Overall Buoy Length: 19.92 Ft.

Focal Height of Light: 11.88 Ft.

Buoy Beam or Diameter: 6.07 Ft.

Freeboard: No Mooring: 3.34 Ft.  
Minimum: 1.00 Ft.

Pounds Per Inch Immersion: 151 Lbs.

Metacentric Height: 0.78 Ft.

Reserve Buoyancy: 1,800 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External



## RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: 62-12 batteries, (2 pockets)  
Lighting Equipment: Electric lantern, 155 or 200mm  
Sound Equipment: None  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 1.125 In.  
Length : 12.2 Ft.  
Mooring Line: Size: 1.125 In.  
Type: Steel Chain  
Sinkers Size: 5,513 Lbs.  
Topmark Type: Cardinal, optional  
Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 4.3 Nmi.  
Maximum Current: 0.3 Kts.  
Mooring Depth: Minimum: 26 Ft.  
Maximum: 207 Ft.  
Reflective Material Type: 4 Retroreflective Ident. Plates

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:        \$0

Service Life:                        25.0 Yrs.

Maintenance Interval:                0 Mos.

## Maintenance Notes:

Bushings in mooring lugs are designed to last at least 3 years.

## Special Features:

## Stability Notes:

Good in tides and wind to 35 knots. Poor in ice. Good to acceptable in short waves to 20' long waves to 26' and breaking waves to 13'.

## General Notes

Replaces Buoy CR-15005.

Radar reflector is omnidirectional.

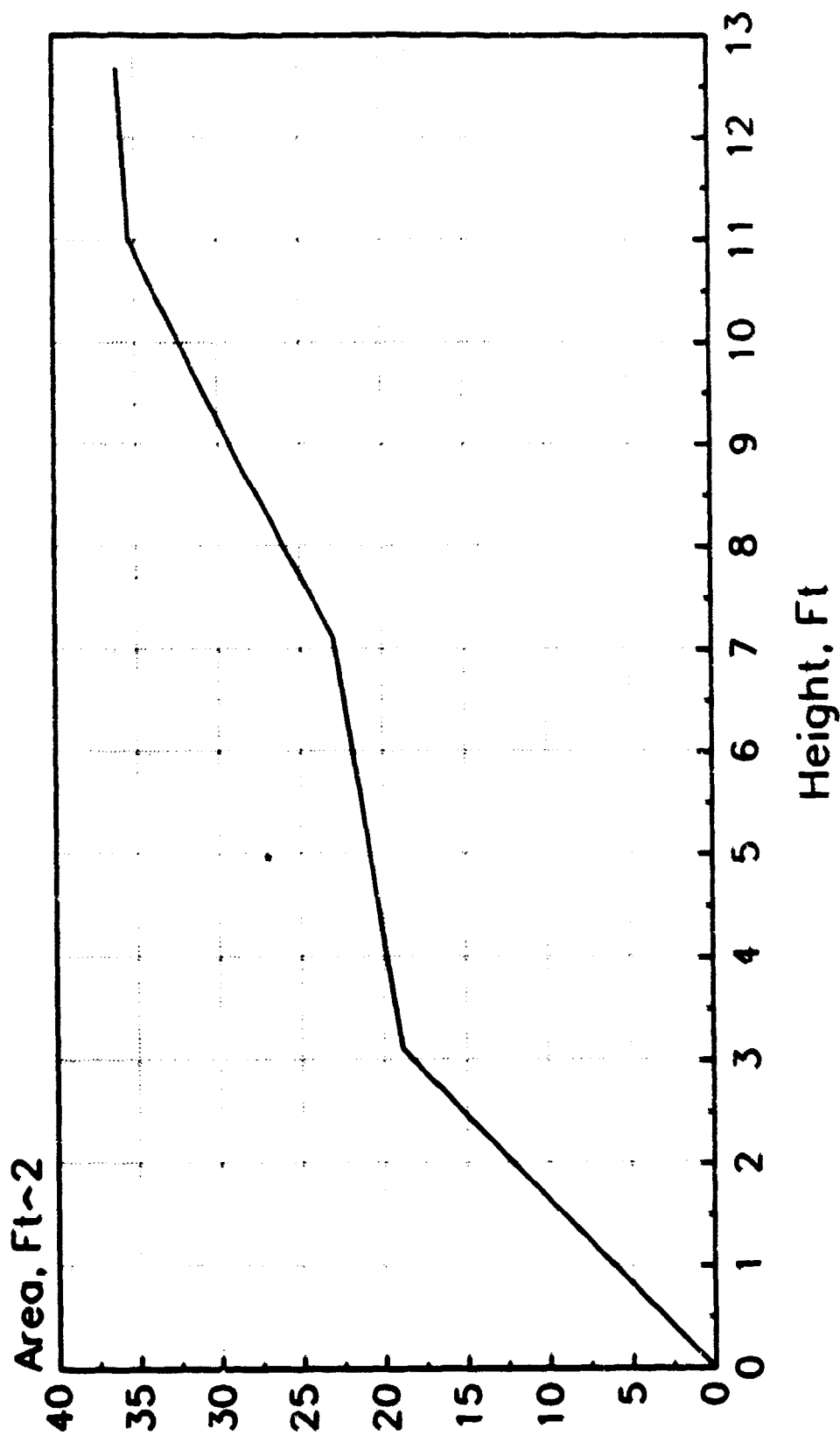
## Manufacturers:

Source of Design:                    Canadian Coast Guard

Drawing Reference:                   Canada 1 & 5

FA-1004 1.8m LR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-1007 2.9m LBR

Country of Use: Canada

Function: Lighted bell buoy (short hull)

For exposed and partially protected salt water.

Date Of Last Update For This Record: 01/24/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,828 Lbs.

Buoy Draft: 8.03 Ft.

Overall Buoy Length: 22.66 Ft.

Focal Height of Light: 13.95 Ft.

Buoy Beam or Diameter: 9.58 Ft.

Freeboard: No Mooring: 1.64 Ft.  
Minimum: 0.74 Ft.

Pounds Per Inch Immersion: 380 Lbs.

Metacentric Height: 1.73 Ft.

Reserve Buoyancy: 3,322 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External Tube

## RELATED EQUIPMENT:

Number of Power Sources: 6

Type of Power Sources: 62-12 batteries, (2 pockets)

Lighting Equipment: Electric lantern, 155 or 200mm

Sound Equipment: Wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.250 In.  
Length : 15.1 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 8,820 Lbs.

Topmark Type: Cardinal, optional

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EF

Nominal Visual Range of Daymark: 2.6 Nmi.

Radar Range: 4.8 Nmi.

Maximum Current: 6.0 Kts.

Mooring Depth: Minimum: 32 Ft.  
Maximum: 184 Ft.

Reflective Material Type: 4 Retroreflective Ident. Plates

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                                30.0 Yrs.

Maintenance Interval:                        0 Mos.

## Maintenance Notes:

Bushing in mooring lugs are designed to last at least 3 years.

## Special Features:

## Stability Notes:

Good in tides and wind to 35 knots. Acceptable in ice conditions. Good in short choppy waves to 20', long waves to 26' and breaking waves to 39'.

## General Notes

Replaces Buoy No. CR-15004

Radar reflector is omnidirectional.

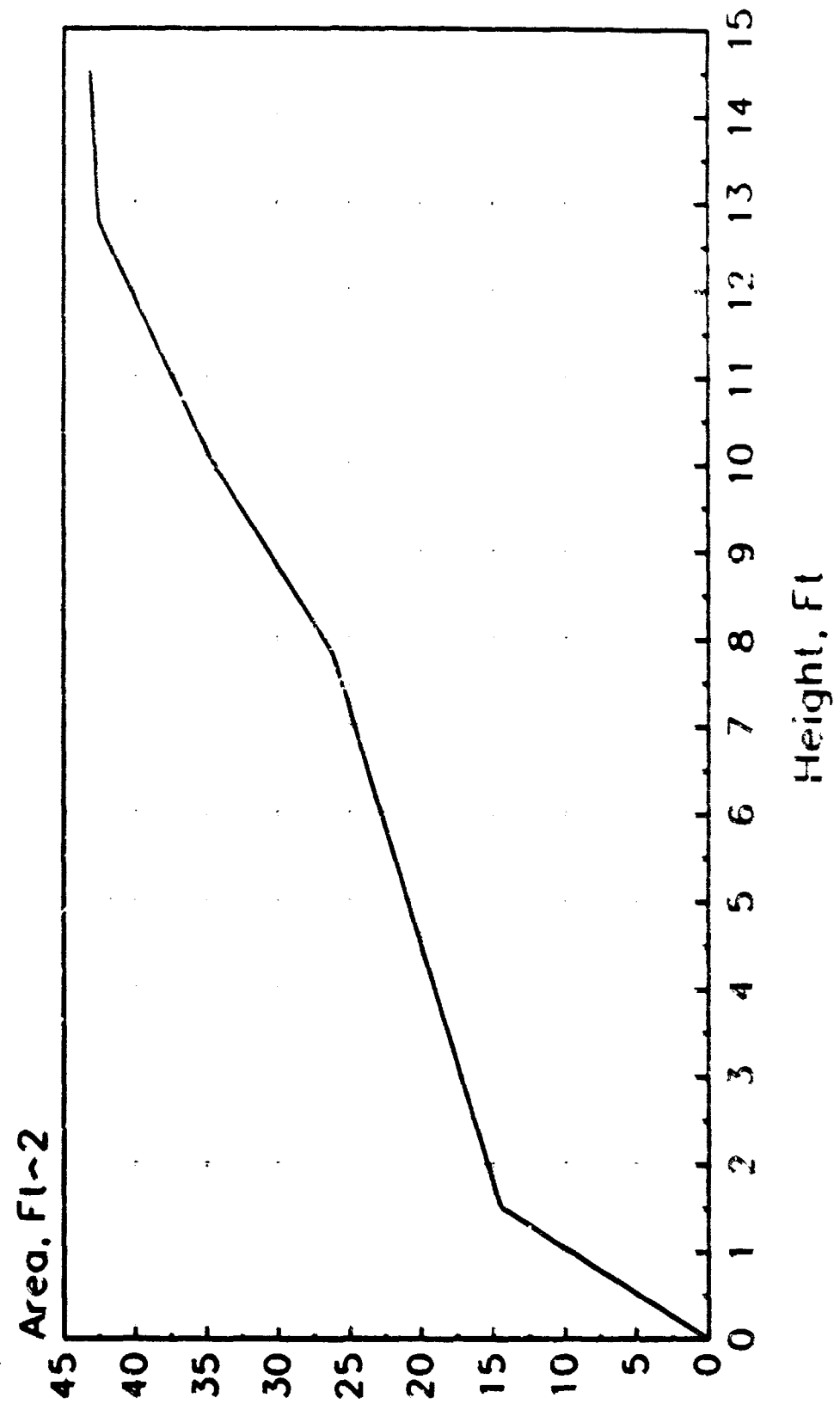
Manufacturers:                                Georgetown, Fairway

Source of Design:                             Canadian Coast Guard

Drawing Reference:                            Canada 1 & 6

# FA-1007 2.9m LBR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-1010 2.9m LWR

Country of Use: Canada

Function: Lighted whistle buoy

For exposed deep salt water.

Date Of Last Update For This Record: 01/24/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 12,140 Lbs.

Buoy Draft: 17.61 Ft.

Overall Buoy Length: 34.32 Ft.

Focal Height of Light: 16.05 Ft.

Buoy Beam or Diameter: 9.58 Ft.

Freeboard: No Mooring: 3.23 Ft.  
Minimum: 0.82 Ft.

Pounds Per Inch Immersion: 375 Lbs.

Metacentric Height: 1.96 Ft.

Reserve Buoyancy: 3,690 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External Tube



## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: 62-12 batteries, (2 pockets)

Lighting Equipment: Electric lantern, 155 or 200mm

Sound Equipment: Wave actuated whistle, 0.25m

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.125 In.  
Length : 12.0 Ft.

Mooring Line: Size: 1.125 In.  
Type: Steel Chain

Sinker Size: 11,025 Lbs.

Topmark Type: Cardinal, optional

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EF

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 4.8 Nmi.

Maximum Current: 6.0 Kts.

Mooring Depth: Minimum: 33 Ft.  
Maximum: 515 Ft.

Reflective Material Type: 4 Retroreflective Ident. Plates

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            30.0 Yrs.

Maintenance Interval:                    0 Mos.

## Maintenance Notes:

The bushings in mooring lugs are designed to last at least 3 years.

## Special Features:

Chafing bars on tailtube and a short bridle provide some roll damping to the buoy.

## Stability Notes:

In tides and winds to 54 knots, stability is good; in ice-flows - acceptable; in superstructure icing - poor; in short, choppy waves to 13', long rolling waves to 26' breaking waves to 40'- performance is good.

## General Notes

Replaces buoy No. CR-15003.

Radar reflector is omnidirectional.

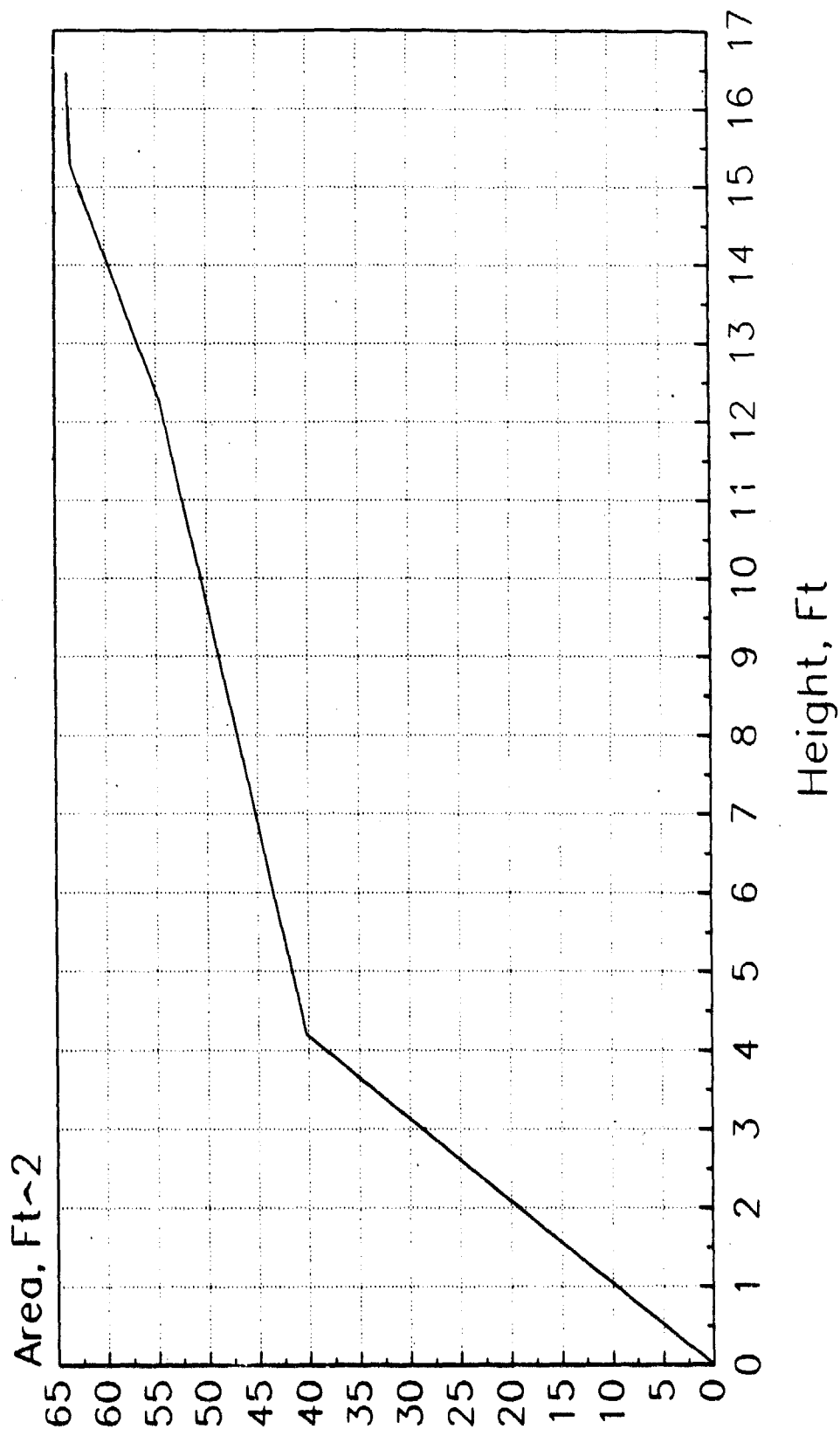
Manufacturers:                            Georgetown, Fairway

Source of Design:                           Canadian Coast Guard

Drawing Reference:                           Canada 1 & 7

# FA-1010 2.9m LWR

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: FA-1015 3.0m SCOW

Country of Use: Canada

Function: Lighted Scow.

For shallow water, moderate current.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,700 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 10.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.66 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: 4 Compartment

Hull Type: Scow

Counterweight Type: none

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: 62-R12 batteries, (1 pocket)

Lighting Equipment: Electric lantern, 155mm

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.750 In.  
Length : 6.9 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 880 Lbs.

Topmark Type: None

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 26 Ft.

Reflective Material Type: 2 Retroreflective Ident. Plates

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            25.0 Yrs.

Maintenance Interval:                   0 Mos.

## Maintenance Notes:

The bushings in the mooring lugs are designed to last at least 3 years.

## Special Features:

## Stability Notes:

Acceptable in tides & winds to 22 knots; poor in ice; very poor in any waves in excess of 3'.

## General Notes

Replaces buoy No's CR-15284, CR-14521 and CR-14777.

## Manufacturers:

Source of Design:                    Canadian Coast Guard

Drawing Reference:                   Canada 1 & 8

## GENERAL INFORMATION

Name of Buoy: FA-1017 1.8m LR

Country of Use: Canada

Function: Lighted buoy intended for extended operation (same design as FA-1004, but with larger battery capacity). For exposed coastal to partially protected salt water.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,363 Lbs.

Buoy Draft: 7.21 Ft.

Overall Buoy Length: 20.58 Ft.

Focal Height of Light: 11.57 Ft.

Buoy Beam or Diameter: 6.07 Ft.

Freeboard: No Mooring: 3.17 Ft.  
Minimum: 1.00 Ft.

Pounds Per Inch Immersion: 151 Lbs.

Metacentric Height: 0.62 Ft.

Reserve Buoyancy: 1,800 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External

## RELATED EQUIPMENT

Number of Power Sources: 12  
Type of Power Sources: 62-12 batteries, (2 pockets)  
Lighting Equipment: Electric lantern, 155 or 200mm  
Sound Equipment: none  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 1.125 In.  
Length : 12.0 Ft.  
Mooring Line: Size: 1.125 In.  
Type: Steel Chain  
Sinker Size: 5,510 Lbs.  
Topmark Type: Cardinal, optional  
Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 4.3 Nmi.  
Maximum Current: 3.0 Kts.  
Mooring Depth: Minimum: 26 Ft.  
Maximum: 150 Ft.  
Reflective Material Type: 4 Retroreflective Ident. Plates



## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            25.0 Yrs.

Maintenance Interval:                    0 Mos.

## Maintenance Notes:

The bushings in the mooring lugs are designed to last at least 3 years.

## Special Features:

Some design as 1.8 x 5.8L, FA-1004, but with larger battery capacity (12 versus 2) for greater endurance.

## Stability Notes:

Good in tides, acceptable in winds to 35 knots; poor response to ice floes and superstructure icing; in short, choppy waves to 20' long rolling waves to 26' and breaking waves to 13' stability is good.

## General Notes

Replaces buoy No. CR-15005

Radar reflector is omnidirectional.

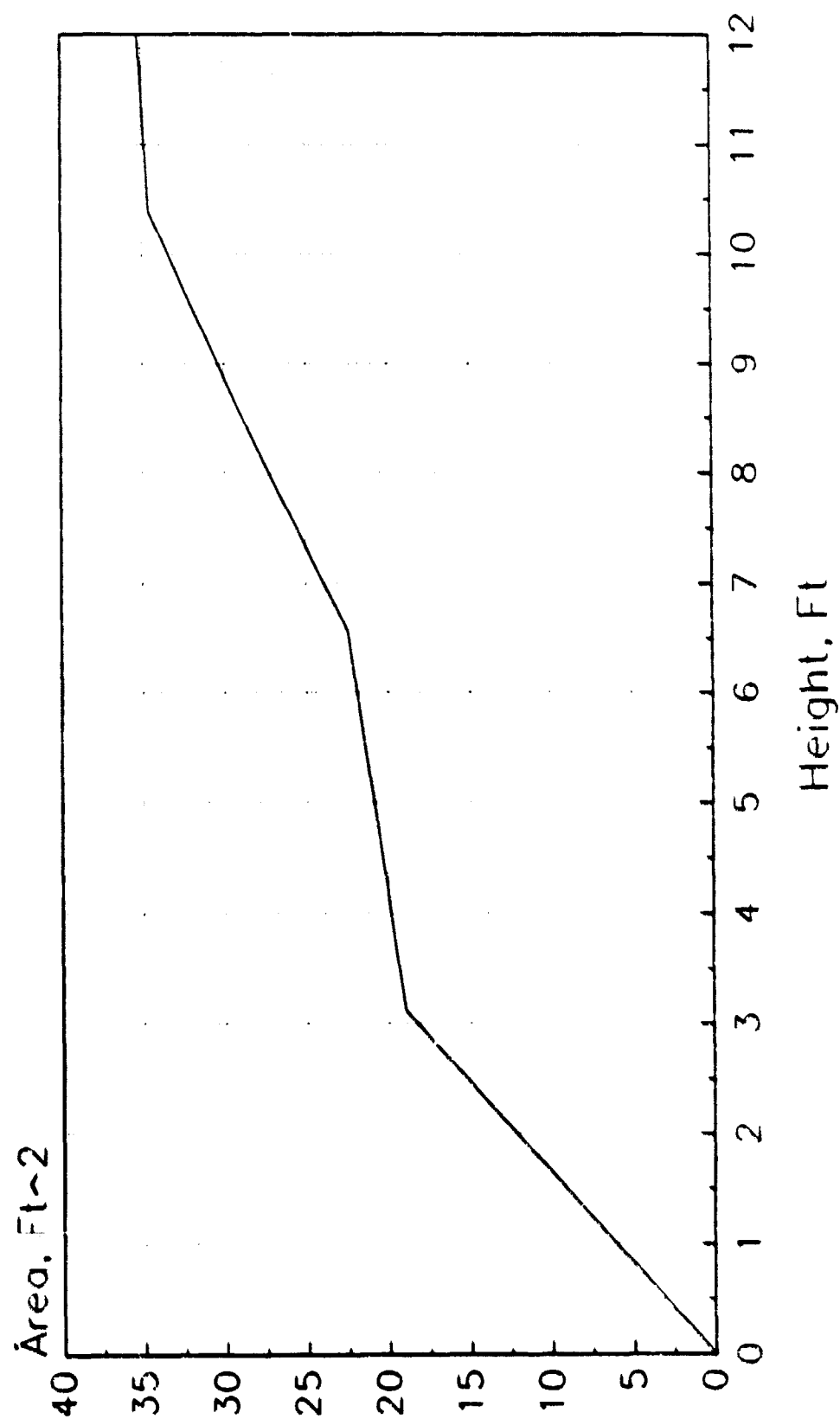
## Manufacturers:

Source of Design:                    Canadian Coast Guard

Drawing Reference:                    Canada 1 & 9

FA-1017 1.8m LR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-1019 1.5m DISCUS

Country of Use: Canada

Function: Lighted buoy; with Can or Conical radar  
reflecting daymark.

For protected and shallow water.

Date Of Last Update For This Record: 01/24/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 284 Lbs.

Buoy Draft: 0.98 Ft.

Overall Buoy Length: 6.71 Ft.

Focal Height of Light: 5.13 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard      No Mooring: 0.89 Ft.  
                 Minimum: 0.25 Ft.

Pounds Per Inch Immersion: 70 Lbs.

Metacentric Height: 1.55 Ft.

Reserve Buoyancy: 210 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : 5000 Series Aluminum  
Hull Filling :  
Tower : 5000 Series Aluminum  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: none

Hull Type: Discus

Counterweight Type: none

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: 62-R12 batteries, (1 pocket)

Lighting Equipment: Electric lantern

Sound Equipment: none

Other Payload: Radar reflecting daymark

Daymark Area: 4.8 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 1,100 Lbs.

Topmark Type: None

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 3.5 Nmi.

Maximum Current: 3.0 Kts.

Mooring Depth Minimum: 2 Ft.  
Maximum: 53 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    25.0 Yrs.

Maintenance Interval:        0 Mos.

## Maintenance Notes:

The bushings in the mooring lug are designed to last at least 3 years.

## Special Features:

Optional 1.6 foot extension for light for higher focal plane.

Floodable lower chamber serves as water ballast.

## Stability Notes:

Acceptable in tides and wind to 22 knots; very poor in ice; acceptable in short choppy waves to 3', poor in all other types of waves.

## General Notes

Minimum mooring depth based on buoy draft. Metacentric height calculated for buoy with 2 batteries installed. Replaces buoy No. AR-15517, CR-15494 and 30" dia. river buoy (old).

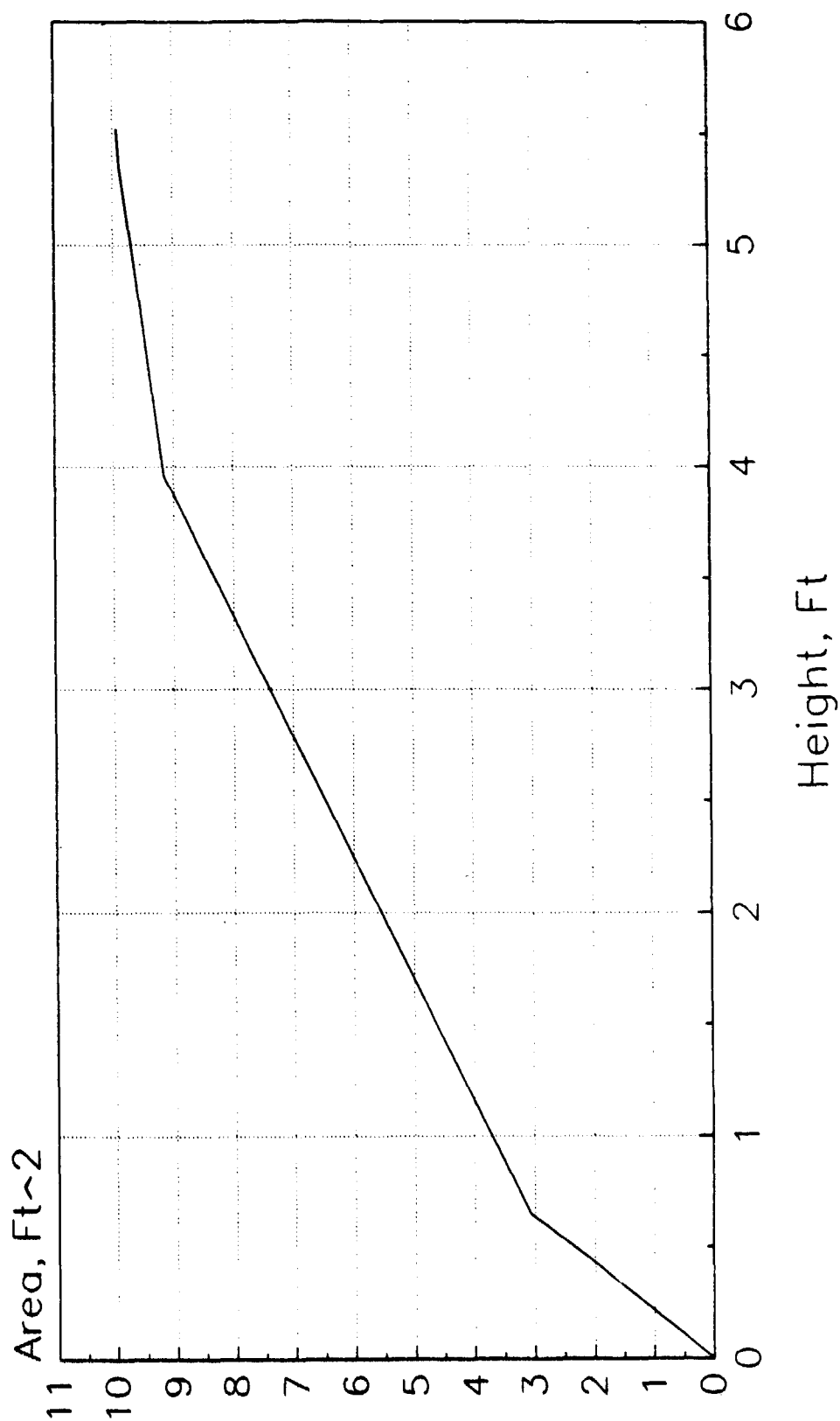
Manufacturers:                    Fairway Ind.

Source of Design:                Canadian Coast Guard

Drawing Reference:               Canada 1 & 10

# FA-1019 1.5m DISCUS

Cumulative Area \_\_\_\_\_



GENERAL INFORMATION

Name of Buoy: FA-2001 0.8m Coastal Can

Country of Use: Canada

Function: Unlighted Can buoy, with Can or  
Spherical radar reflecting daymark.

For protected salt water.

Date Of Last Update For This Record: 01/24/91

PHYSICAL CHARACTERISTICS

Buoy Weight: 364 Lbs.

Buoy Draft: 2.30 Ft.

Overall Buoy Length: 5.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.62 Ft.

Freeboard No Mooring: 1.80 Ft.  
Minimum: 0.74 Ft.

Pounds Per Inch Immersion: 28 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 248 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: none

Hull Type: Cylindrical, sph.bot

Counterweight Type: External Ball Option

#### RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: Radar reflecting daymark

Daymark Area: 2.6 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.500 In.  
Type: Steel Chain

Sinker Size: 880 Lbs.

Topmark Type: none

Number of Padeyes: 5

#### OPERATING CHARACTERISTICS

Operating Environment: PM, tidal zone

Nominal Visual Range of Daymark: 1.4 Nmi.

Radar Range: 3.0 Nmi.

Maximum Current: 2.0 Kts.

Mooring Depth Minimum: 5 Ft.  
Maximum: 98 Ft.

Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                    25.0 Yrs.

Maintenance Interval:         0 Mos.

Maintenance Notes:

Bushings in the mooring lug are designed to last at least 3 years.

Special Features:

Stability Notes:

Unstable without 200lb minimum chain mooring or extrnl ball counterweight; GM = 0.89 feet. Good in tides and wind to 27 knots; Acceptable in ice; Acceptable in short, choppy waves to 3', long rolling waves to 13' and breaking waves to 20'.

General Notes

Replaces buoy No. CR-15001.

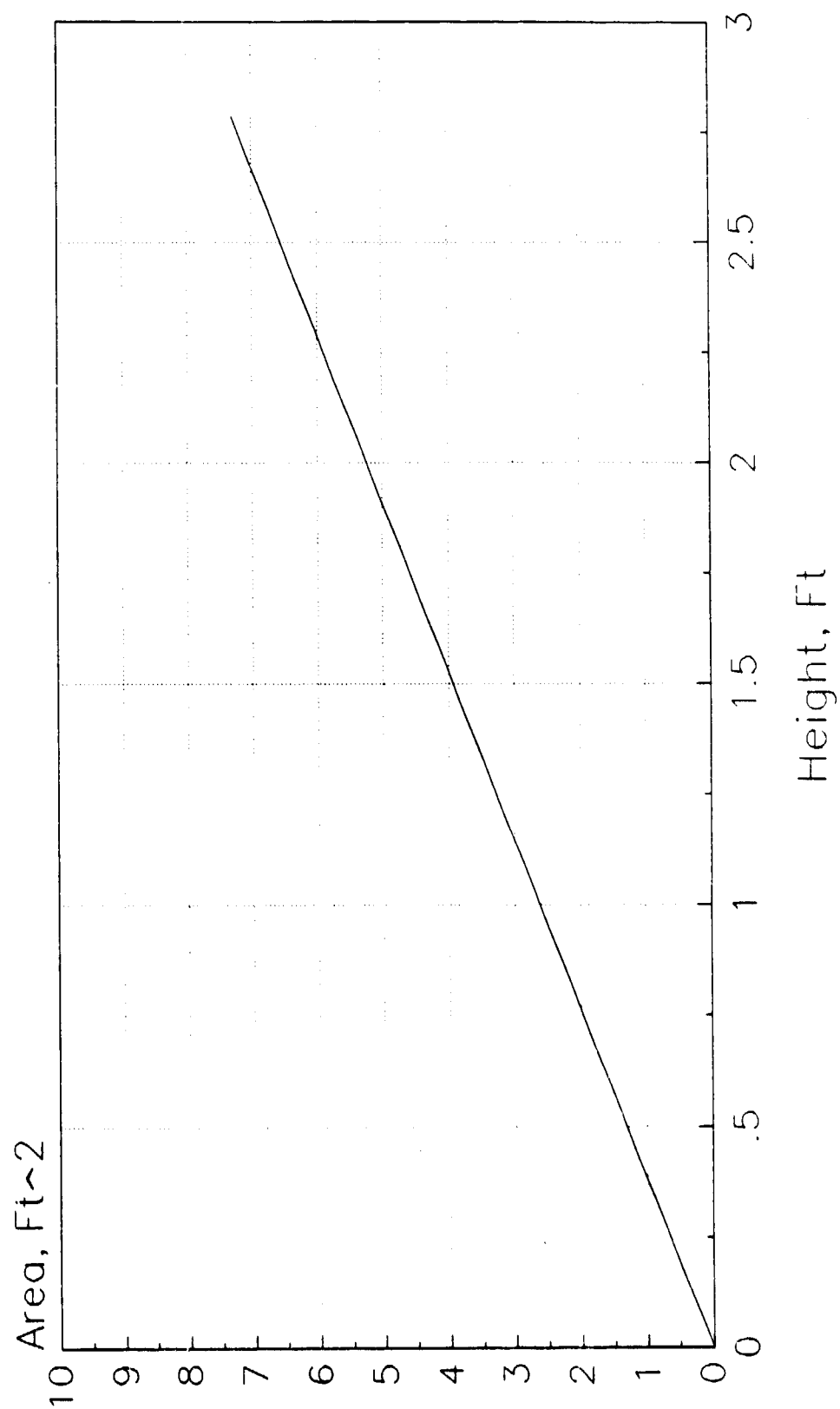
Manufacturers:                    Fairway Ind.

Source of Design:                Canadian Coast Guard

Drawing Reference:               Canada 2 & 11

# FA-2001 0.8m Coastal Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2002 0.8m Coastal Conical

Country of Use: Canada

Function: Unlighted Conical (Nun) buoy, with radar reflecting daymark.

For protected salt water.

Date Of Last Update For This Record: 01/24/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 324 Lbs.

Buoy Draft: 2.18 Ft.

Overall Buoy Length: 5.33 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.62 Ft.

Freeboard      No Mooring: 1.53 Ft.  
                 Minimum: 0.82 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.13 Ft.

Reserve Buoyancy: 139 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
                         Hull Filling :  
                         Tower :  
                         Topmark :  
                         Counterweight: Concrete

Coating/Coloring System:

Subdivision: none

Hull Type: Conical top, sph.bot

Counterweight Type: Internal

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 1.1 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.500 In.  
Type: Steel Chain  
Sinkers Size: 880 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: PM, tidal zone  
Nominal Visual Range of Daymark: 1.0 Nmi.  
Radar Range: 2.3 Nmi.  
Maximum Current: 2.0 Kts.  
Mooring Depth Minimum: 3 Ft.  
Maximum: 63 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$0  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 25.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

The bushings in the mooring lug are designed to last at least 3 years.

Special Features:

Stability Notes:

Good in tides and wind to 30 knots; Acceptable in ice; Good in short choppy waves to 10'.

General Notes

Minimum mooring depth based on buoy draft.

Replaces buoy No. CR-15002

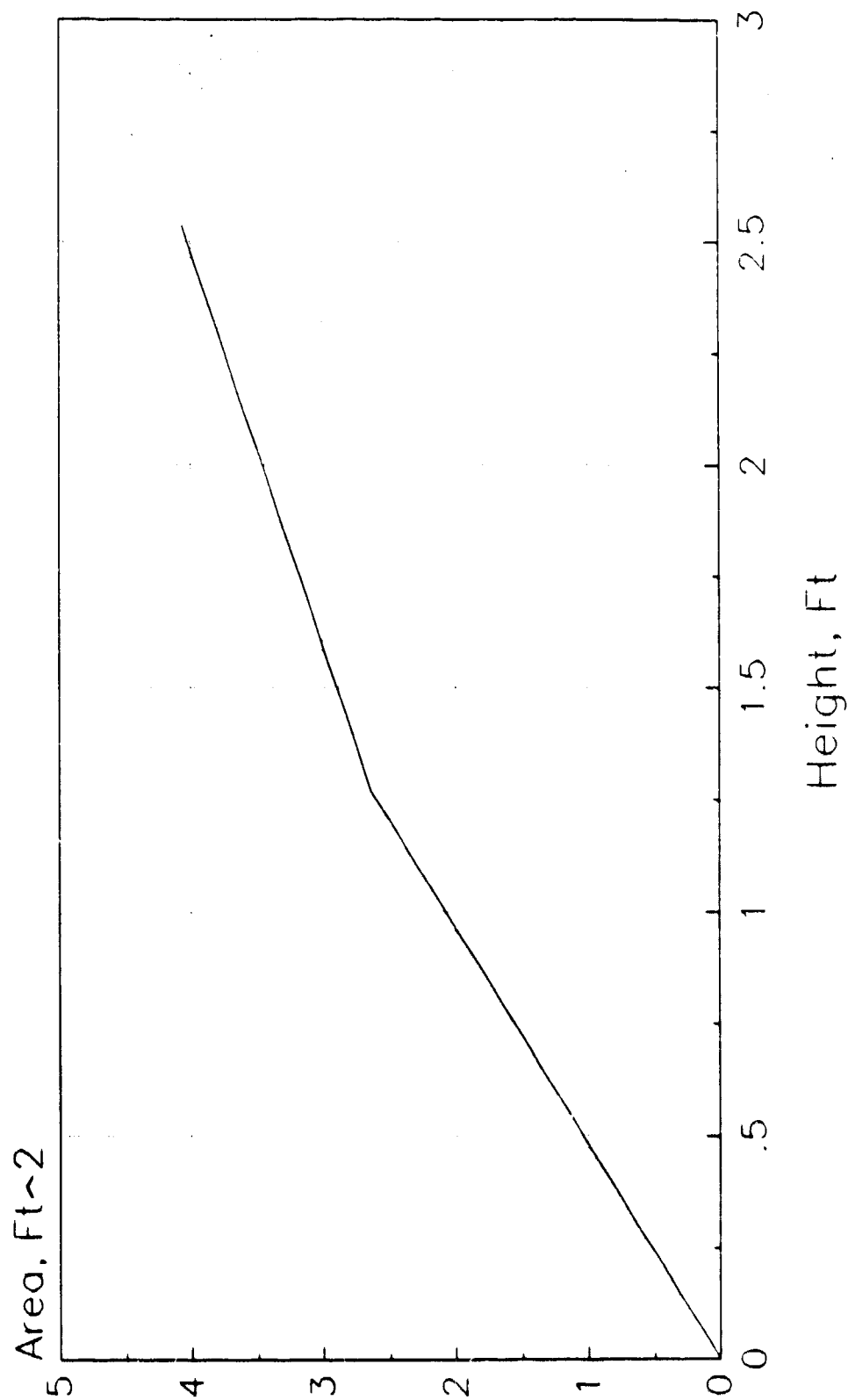
Manufacturers: Fairway Ind.

Source of Design: Canadian Coast Guard

Drawing Reference: Canada 2 & 12

# FA-2002 0.8m Coastal Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2003 1.2m Coastal Can

Country of Use: Canada

Function: Unlighted Can buoy, with Can or  
Spherical radar reflecting daymark.

For semi-exposed salt water.

Date Of Last Update For This Record: 01/24/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 926 Lbs.

Buoy Draft: 2.66 Ft.

Overall Buoy Length: 7.63 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.94 Ft.

Freeboard      No Mooring: 3.05 Ft.  
                 Minimum: 1.31 Ft.

Pounds Per Inch Immersion: 63 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 992 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: None

Hull Type: Cylindrical, Sph.Bot

Counterweight Type: Optional Ext. Ball

#### RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 5.8 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.750 In.  
Type: Steel Chain  
Sinkers Size: 3,090 Lbs.  
Topmark Type: none  
Number of Padeyes: 5

#### OPERATING CHARACTERISTICS

Operating Environment: SM, tidal zone  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 3.9 Nmi.  
Maximum Current: 4.0 Kts.  
Mooring Depth Minimum: 6 Ft.  
Maximum: 160 Ft.  
Reflective Material Type:



ADDITIONAL DATA

Cost: Replacement: \$0  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 25.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

The bushings in the mooring lug are designed to last at least 3 years.

Special Features:

Stability Notes:

Unstable without 530 lbs of chain mooring or extrnl ball counterweight; GM = -1.47 Good stability in tides & wind to 49 knots; Acceptable in ice; Acceptable in short choppy waves to 3', long rolling waves to 13' & breaking waves to 20'.

General Notes

Replaces buoy No. CR-15001

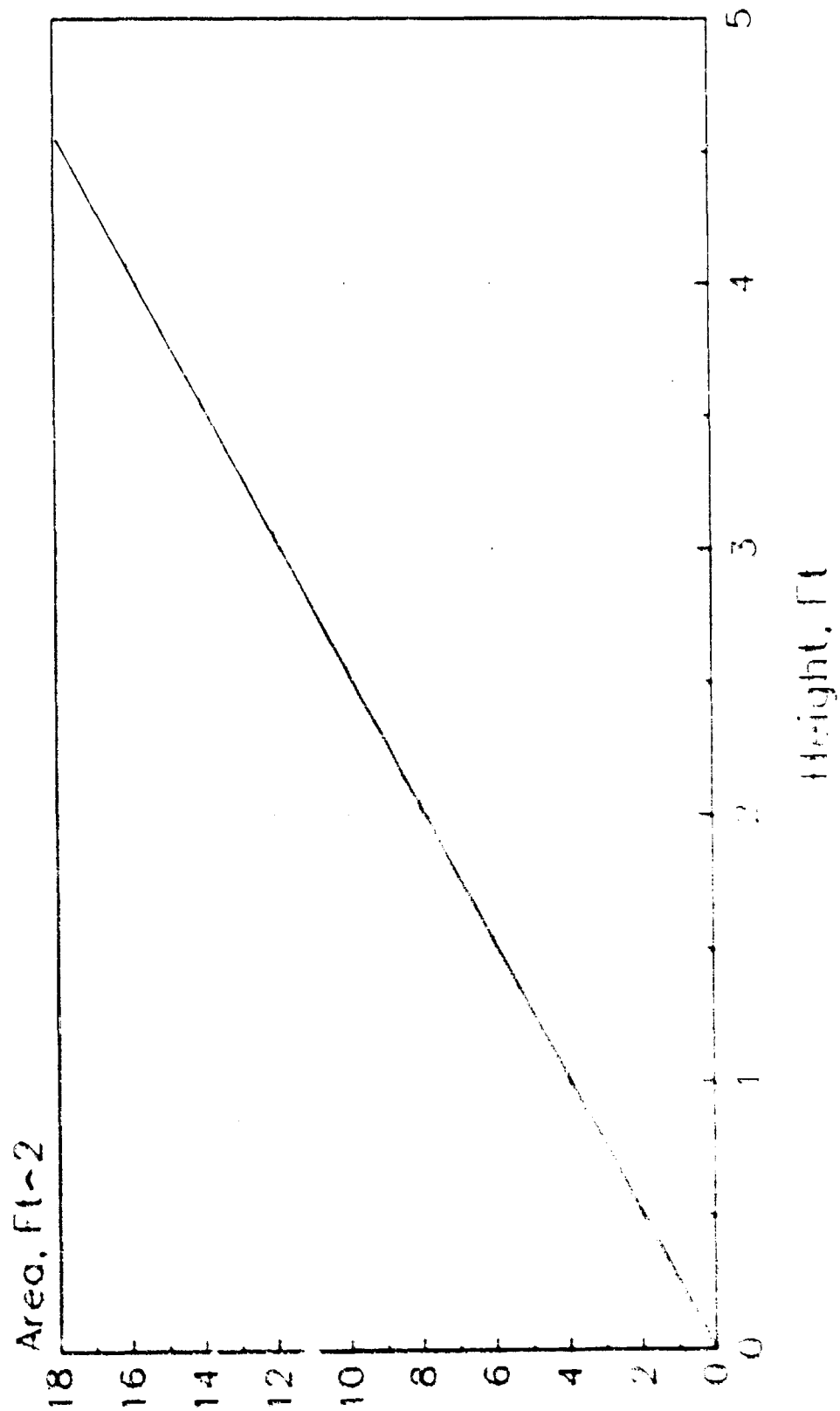
Manufacturers: Fairway Ind.

Source of Design: Canadian Coast Guard

Drawing Reference: Canada 2 & 13

# FA-2003 1.2m Coastal Can

Cumulative Area



GENERAL INFORMATION

Name of Buoy: FA-2004 1.2m Coastal Conical

Country of Use: Canada

Function: Unlighted Conical (Nun) buoy, with radar reflecting daymark.

For semi-exposed saltwater.

Date Of Last Update For This Record: 01/24/91

PHYSICAL CHARACTERISTICS

Buoy Weight: 549 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 7.30 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.94 Ft.

Freeboard No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: None

Hull Type: Conical Top, Sph. Bot

Counterweight Type: Internal

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: one  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.875 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: SM, tidal zone  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth Minimum: 4 Ft.  
Maximum: 164 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$0  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 25.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

The bushings in the mooring lug are designed to last at least 3 years.

Special Features:

Stability Notes:

General Notes

Minimum mooring depth based on buoy draft.

Replaces buoy No. CR-15002.

Manufacturers: Fairway Ind.

Source of Design: Canadian Coast Guard

Drawing Reference: Canada 2

## GENERAL INFORMATION

Name of Buoy: FA-2005 1.6m Coastal Can

Country of Use: Canada

Function: Unlighted Can buoy, with Can or  
Spherical radar reflecting daymark.

For semi-exposed salt water.

Date Of Last Update For This Record: 01/23/91

## PHYSICAL CHARACTERISTICS

Buoy Weight:	1,645 Lbs.
Buoy Draft:	2.87 Ft.
Overall Buoy Length:	9.86 Ft.
Focal Height of Light:	0.00 Ft.
Buoy Beam or Diameter:	5.25 Ft.
Freeboard	No Mooring: 4.51 Ft.
	Minimum: 1.97 Ft.
Pounds Per Inch Immersion:	112 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	2,645 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Steel
	Hull Filling :
	Tower :
	Topmark :
	Counterweight: Cast Iron
Coating/Coloring System:	
Subdivision:	None
Hull Type:	Cylindrical, Sph.Bot
Counterweight Type:	Optional Ext. Ball

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 10.3 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.750 In.  
Type: Steel Chain  
Sinkers Size: 4,410 Lbs.  
Topmark Type: none  
Number of Padeyes: 5

OPERATING CHARACTERISTICS

Operating Environment: SF, tidal zone  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 4.7 Nmi.  
Maximum Current: 5.0 Kts.  
Mooring Depth Minimum: 6 Ft.  
Maximum: 413 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                    30.0 Yrs.

Maintenance Interval:         0 Mos.

Maintenance Notes:

The bushings in the mooring lug are designed to last least 3 years.

Special Features:

Stability Notes:

Unstable without 1200 pounds of mooring chain or external ball counterweight; GM = 2.01 feet. Good stability in tide and wind to 51 knots; good in ice; acceptable is short choppy waves to 7' and long rolling waves to 20'.

General Notes

Replaces buoy No. CR-15001

Manufacturers:                    Fairway Ind.

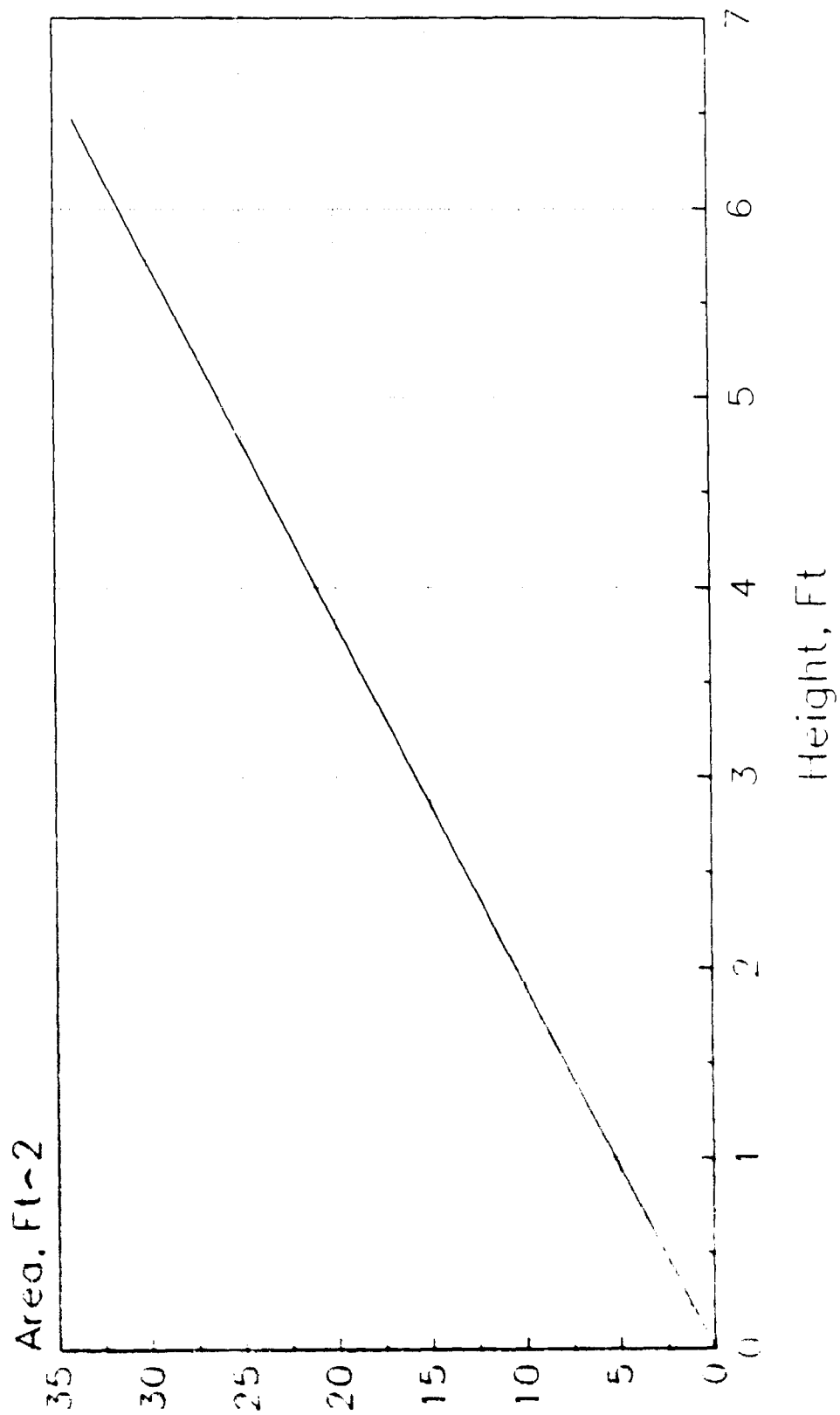
Source of Design:                Canadian Coast Guard

Drawing Reference:               Canada 2 & 14



# FA-2005 1.6m Coastal Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2006 1.6m Coastal Conical

Country of Use: Canada

Function: Unlighted Conical (Nun) buoy, with radar reflecting daymark.

For semi-exposed salt water.

Date Of Last Update For This Record: 01/23/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,400 Lbs.

Buoy Draft: 2.68 Ft.

Overall Buoy Length: 9.27 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.25 Ft.

Freeboard      No Mooring: 4.44 Ft.  
                 Minimum: 2.50 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.16 Ft.

Reserve Buoyancy: 1,389 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
                         Hull Filling :  
                         Tower :  
                         Topmark :  
                         Counterweight: Concrete

Coating/Coloring System:

Subdivision: none

Hull Type: Conical Top, Sph.Bot

Counterweight Type: Internal

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 2.7 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.750 In.  
Type: Steel Chain  
Sinkers Size: 4,410 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: SM, tidal zone  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 3.8 Nmi.  
Maximum Current: 3.0 Kts.  
Mooring Depth Minimum: 3 Ft.  
Maximum: 280 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$0  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 30.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

The bushings in the mooring lug are designed to last at least 3 years.

Special Features:

Stability Notes:

Acceptable stability in tides and wind to 50 knots;  
acceptable in ice; good in short, choppy wave to 7' and long  
rolling waves to 20' high.

General Notes

Minimum mooring depth based on buoy draft.

Replaces buoy No. CR-15002

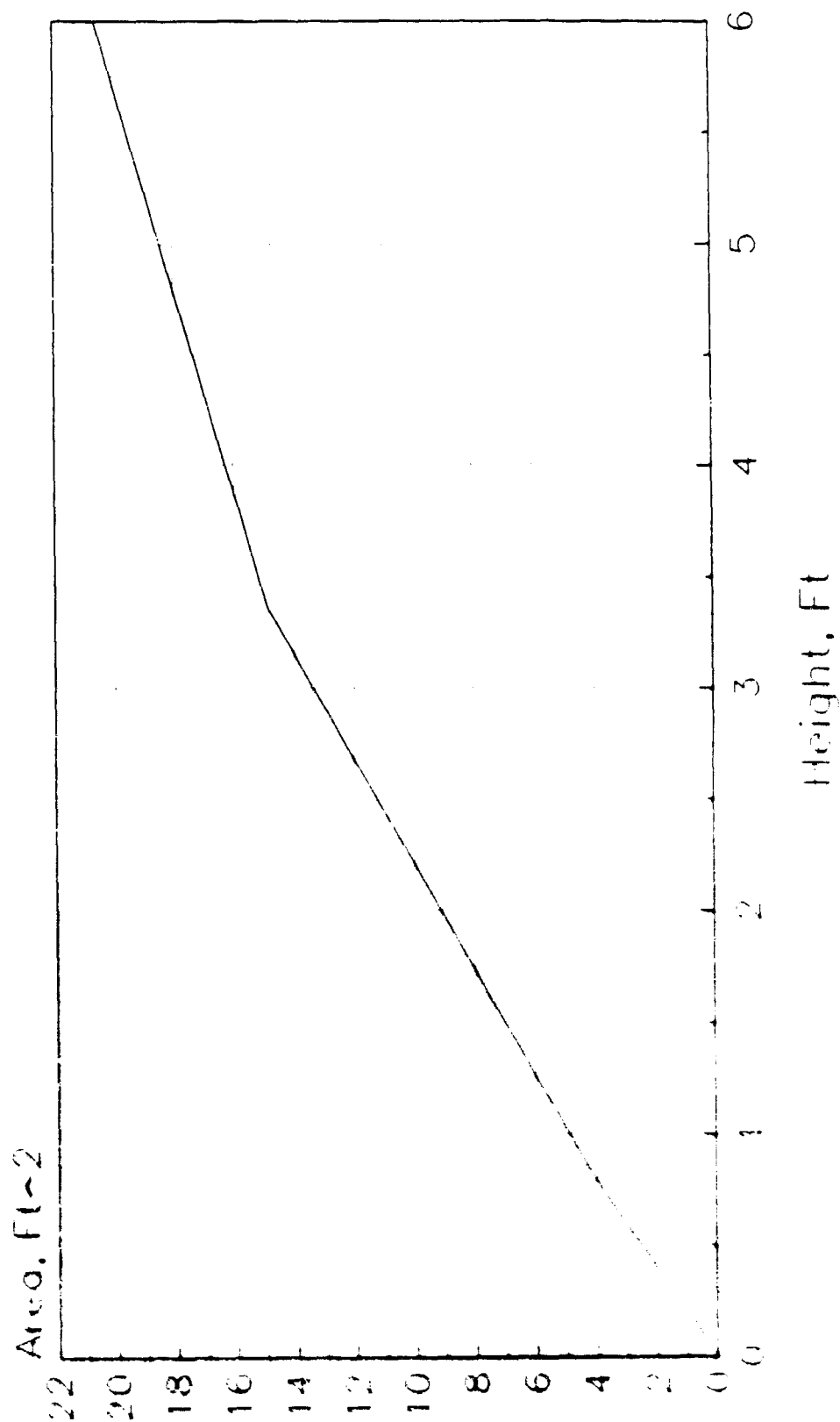
Manufacturers: Fairway Ind.

Source of Design: Canadian Coast Guard

Drawing Reference: Canada 2 & 15

# FA--2006 1.6m Coastal Conical

Cumulative Area



GENERAL INFORMATION

Name of Buoy: FA-2007 2.0m Coastal Conical

Country of Use: Canada

Function: Unlighted Conical (Nun) buoy, with radar reflecting daymark.

For exposed saltwater.

Date Of Last Update For This Record: 01/23/91

PHYSICAL CHARACTERISTICS

Buoy Weight: 2,018 Lbs.

Buoy Draft: 2.77 Ft.

Overall Buoy Length: 11.24 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 6.56 Ft.

Freeboard      No Mooring: 5.93 Ft.  
Minimum: 4.03 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.20 Ft.

Reserve Buoyancy: 4,145 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: None

Hull Type: Conical Top, Sph.Bot

Counterweight Type: Internal

#### RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 3.8 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.750 In.  
Type: Steel Chain  
Sinkers Size: 4,410 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

#### OPERATING CHARACTERISTICS

Operating Environment: EF, tidal zone  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 4.6 Nmi.  
Maximum Current: 5.0 Kts.  
Mooring Depth Minimum: 3 Ft.  
Maximum: 460 Ft.  
Reflective Material Type:

**ADDITIONAL DATA**

**Cost:**                    **Replacement:**        \$0  
                             **Preparation:**         \$0  
                             **Monthly Servicing:**    \$0

**Service Life:**                                30.0 Yrs.

**Maintenance Interval:**                    0 Mos.

**Maintenance Notes:**

The bushings in the mooring lug are designed to last at least 3 years.

**Special Features:**

**Stability Notes:**

Good stability in tides and wind to 50 knots; acceptable in ice; acceptable in short, choppy waves to 7', long rolling waves to 20' and breaking waves to 20' high.

**General Notes**

Minimum mooring depth based on buoy draft.

Replaces buoy No. CR-15002.

**Manufacturers:**                                Fairway Ind.

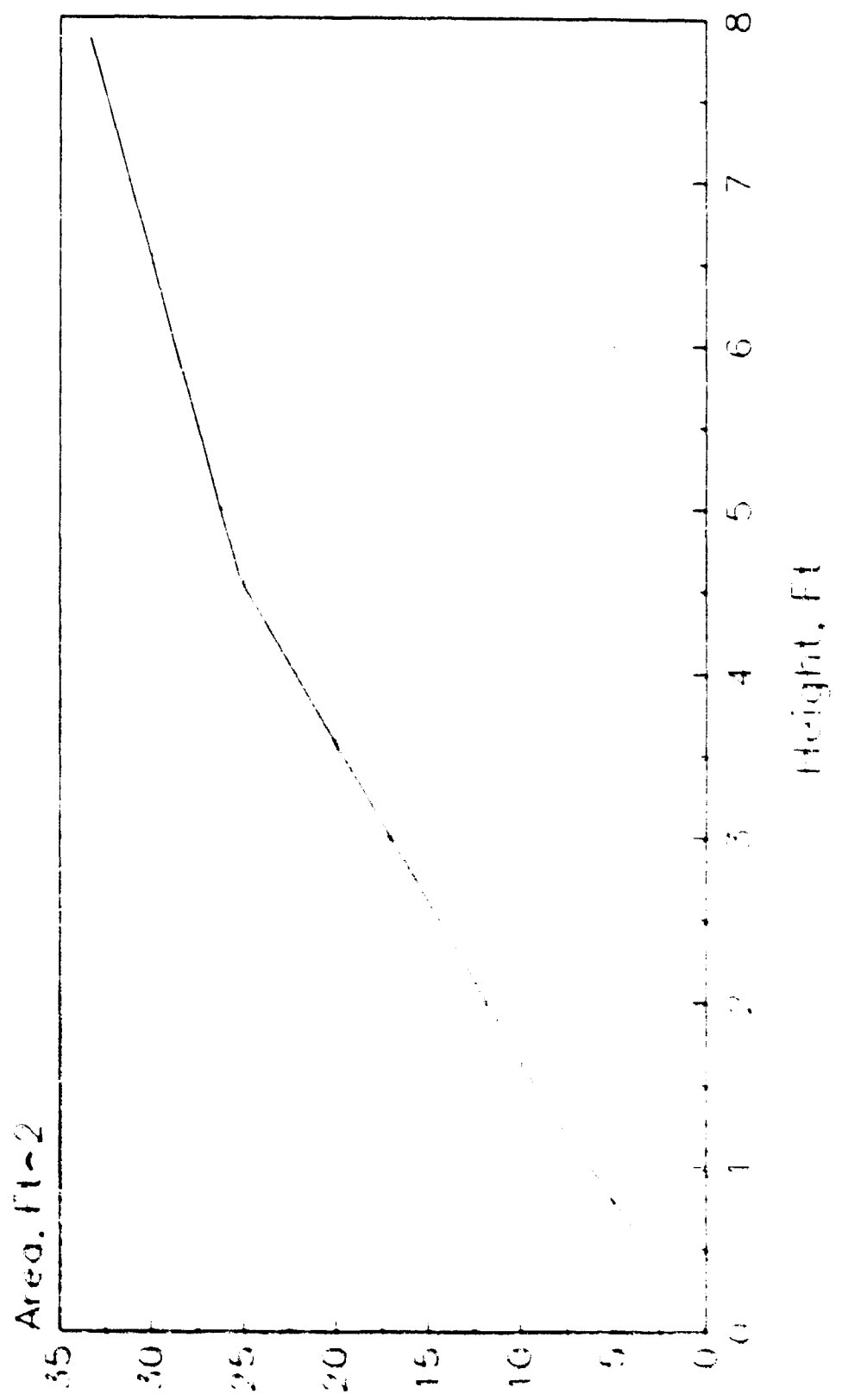
**Source of Design:**                            Canadian Coast Guard

**Drawing Reference:**                           Canada 2 & 16



# FA-2007 2.0m Coastal Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2008 0.9m River Conical

Country of Use: Canada

Function: Unlighted river buoy, with Conical radar reflecting daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,047 Lbs.

Buoy Draft: 5.02 Ft.

Overall Buoy Length: 9.84 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.00 Ft.

Freeboard: No Mooring: 2.33 Ft.  
Minimum: 0.95 Ft.

Pounds Per Inch Immersion: 37 Lbs.

Metacentric Height: 0.04 Ft.

Reserve Buoyancy: 422 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: Horiz. Bhd, Mid Hull

Hull Type: Cylindrical

Counterweight Type: Internal

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: Radar reflecting daymark  
Daymark Area: 5.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.500 In.  
Type: Steel Chain  
Sinker Size: 3,310 Lbs.  
Topmark Type: none  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM, rivers  
Nominal Visual Range of Daymark: 1.5 Nmi.  
Radar Range: 3.9 Nmi.  
Maximum Current: 3.0 Kts.  
Mooring Depth: Minimum: 6 Ft.  
Maximum: 164 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            25.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

The bushing in the mooring lug is designed to last at least 3 years.

Special Features:

Buoy has 9 additional vertical positions for lateral attachment of the mooring to accomodate a range of currents.

Stability Notes:

Very good stability in current & winds to 43 knots, acceptable in ice; acceptable in short, choppy waves to 3' long rolling waves to 13' and breaking waves to 20'.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommendations.

Replaces buoy No. CR-14765B

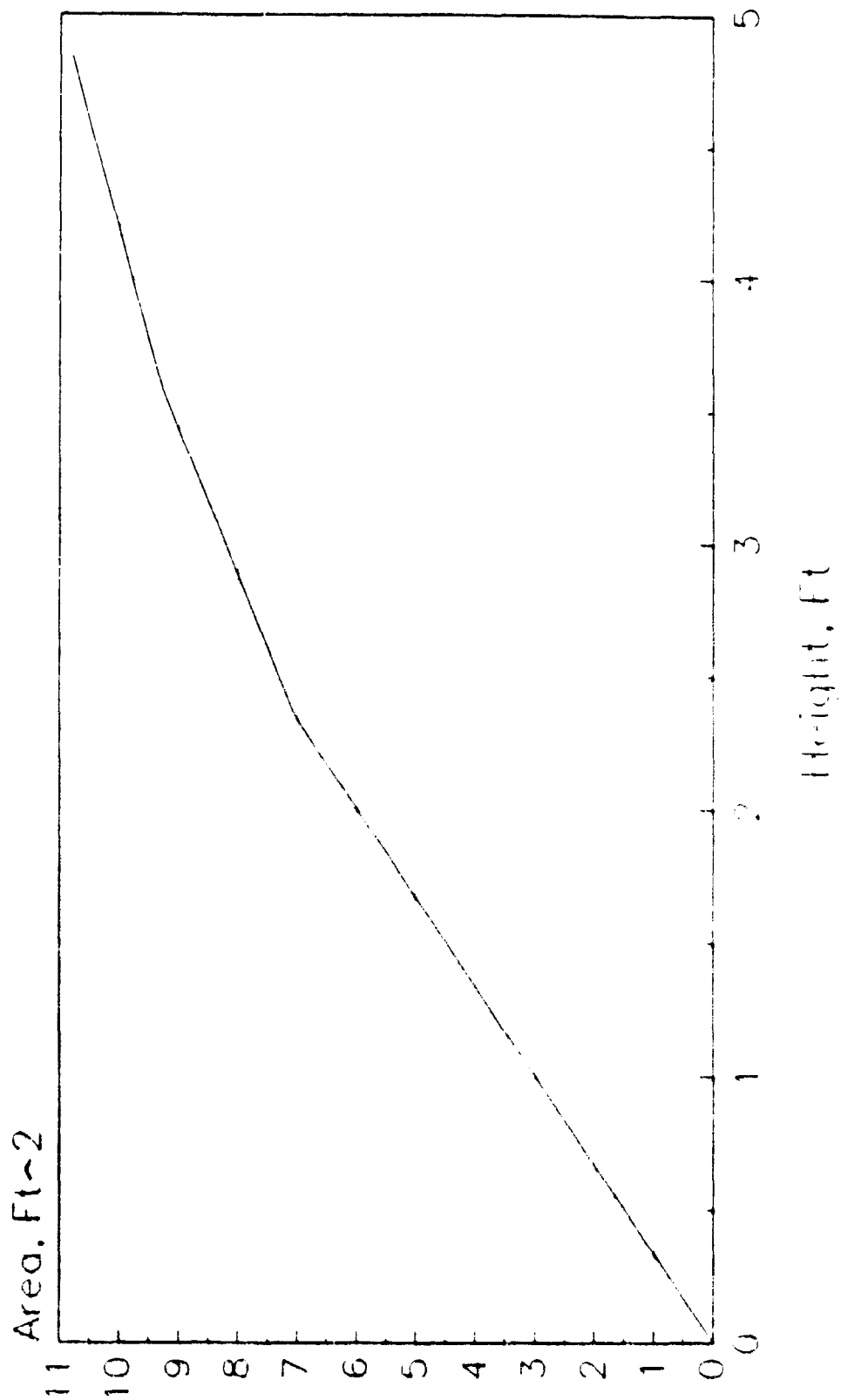
Manufacturers:

Source of Design:                    Canadian Coast Guard

Drawing Reference:                    Canada 2 & 17

# FA-2008 0.9m River Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2009 0.9m River Can

Country of Use: Canada

Function: Unlighted river buoy, with Can radar reflecting daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,094 Lbs.

Buoy Draft: 5.13 Ft.

Overall Buoy Length: 8.86 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.00 Ft.

Freeboard: No Mooring: 2.22 Ft.  
Minimum: 0.85 Ft.

Pounds Per Inch Immersion: 37 Lbs.

Metacentric Height: 0.05 Ft.

Reserve Buoyancy: 379 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: Horiz. Bhd, Mid Hull

Hull Type: Cylindrical

Counterweight Type: Internal

RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: Radar reflecting daymark

Daymark Area: 4.5 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.500 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: None

Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM, rivers

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 3.9 Nmi.

Maximum Current: 3.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 164 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                    25.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

The bushing in the mooring lug is designed to last at least 3 years.

Special Features:

Buoy has 9 additional vertical positions for lateral attachment of the mooring to accomodate a range of currents.

Stability Notes:

Good stability in current and winds to 43 knots; acceptable in ice floes; acceptable in short, choppy wave to 3', long rolling waves to 13' and breaking waves to 20'.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommended practice.

Replaces buoy No. CR-14765B.

Manufacturers:

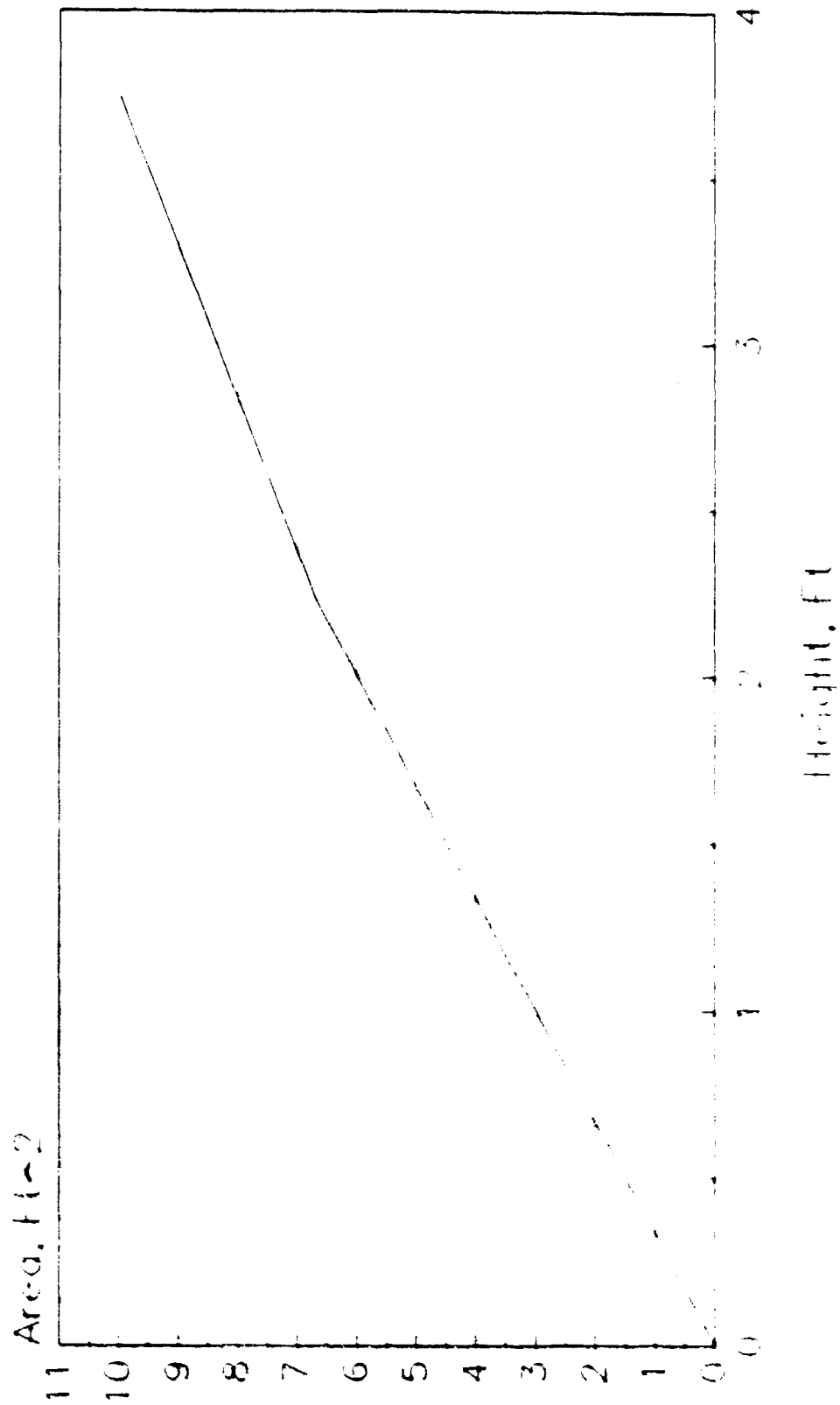
Source of Design:                    Canadian Coast Guard

Drawing Reference:                    Canada 2 & 18



# FA-2009 0.9m River Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2010 1.2m River Conical

Country of Use: Canada

Function: Unlighted river buoy, with Conical radar reflecting daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,838 Lbs.

Buoy Draft: 7.22 Ft.

Overall Buoy Length: 15.58 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.00 Ft.

Freeboard:        No Mooring: 3.77 Ft.  
                     Minimum: 2.03 Ft.

Pounds Per Inch Immersion: 66 Lbs.

Metacentric Height: 0.12 Ft.

Reserve Buoyancy: 1,611 Lbs.

Wave Motion Response:

Construction Material:    Hull Shell     : Steel  
                             Hull Filling    :  
                             Tower           :  
                             Topmark       :  
                             Counterweight: Concrete

Coating/Coloring System:

Subdivision:               Horiz. Bhd, Mid Hull

Hull Type:                  Cylindrical

Counterweight Type:        Internal

**RELATED EQUIPMENT**

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: Radar reflecting daymark

Daymark Area: 11.5 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 3,970 Lbs.

Topmark Type: none

Number of Padeyes: 2

**OPERATING CHARACTERISTICS**

Operating Environment: SM, rivers

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 5.7 Nmi.

Maximum Current: 3.0 Kts.

Mooring Depth: Minimum: 8 Ft.  
Maximum: 160 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                                25.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

The bushing in the mooring lug is designed to last at least 3 years.

Special Features:

Buoy has 10 additional vertical positions for lateral attachment of the mooring to accomodate a range of currents.

Stability Notes:

Very good stability in current and wind to 50 knots; good in ice floes; very good in short, choppy waves to 2' and long rolling waves to 7' high.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommended practice.

Replaces buoy No. CR-14765A.

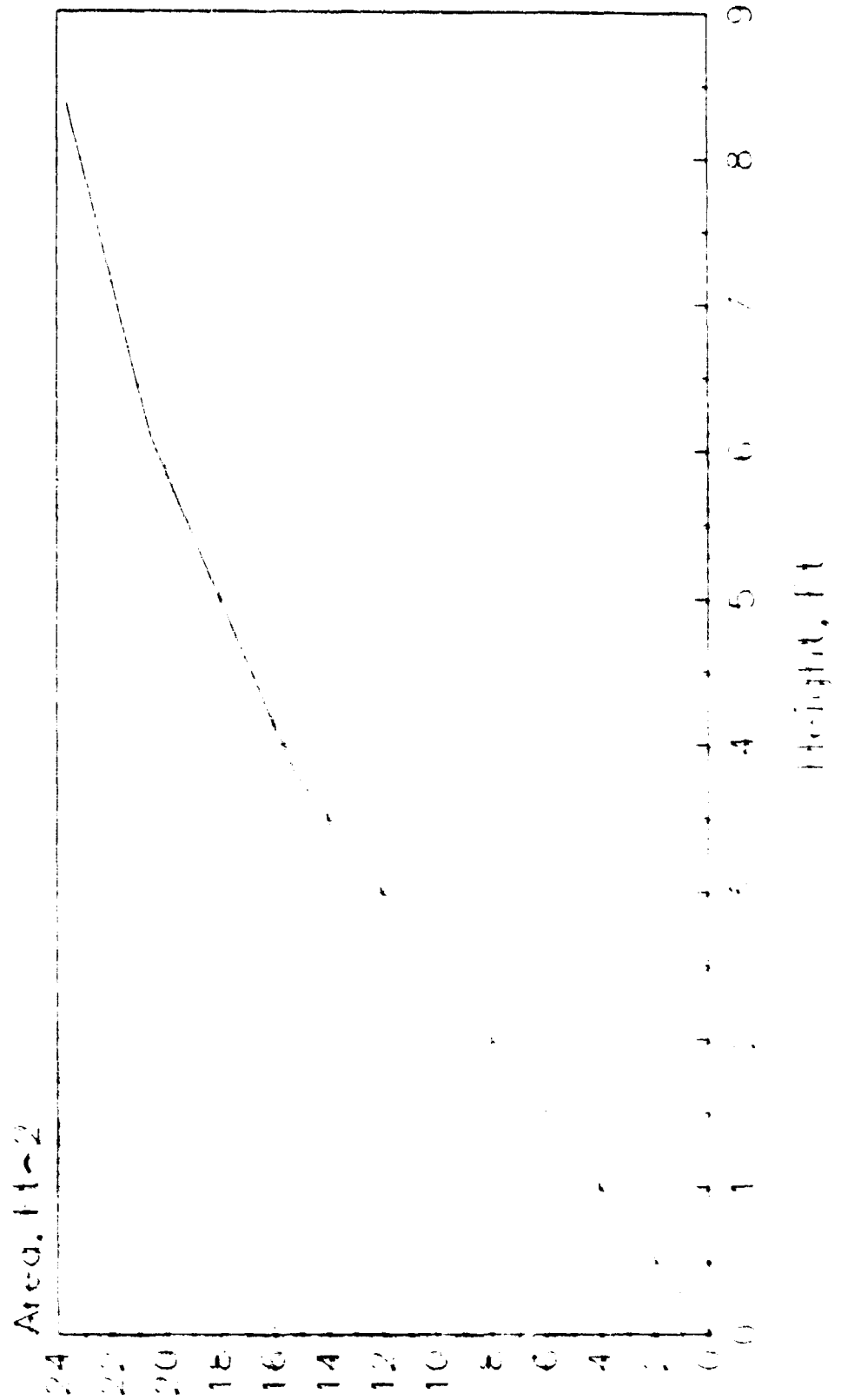
Manufacturers:

Source of Design:                            Canadian Coast Guard

Drawing Reference:                           Canada 2 & 19

# 1A 2010 1.2m River Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2011 1.2m River Can

Country of Use: Canada

Function: Unlighted river buoy, with Can radar reflecting daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,065 Lbs.

Buoy Draft: 7.51 Ft.

Overall Buoy Length: 14.27 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.00 Ft.

Freeboard: No Mooring: 3.48 Ft.  
Minimum: 1.74 Ft.

Pounds Per Inch Immersion: 66 Lbs.

Metacentric Height: 0.06 Ft.

Reserve Buoyancy: 1,377 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: Horiz. Bhd, Mid Hull

Hull Type: Cylindrical

Counterweight Type: Internal

**RELATED EQUIPMENT**

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: Radar reflecting daymark

Daymark Area: 13.1 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 3,970 Lbs.

Topmark Type: none

Number of Padeyes: 2

**OPERATING CHARACTERISTICS**

Operating Environment: SM, rivers

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 5.3 Nmi.

Maximum Current: 3.0 Kts.

Mooring Depth: Minimum: 8 Ft.  
Maximum: 160 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            25.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

The bushing in the mooring lug is designed to last at least 3 years.

Special Features:

Buoy 10 additional vertical positions for lateral attachment of the mooring to accomodate a range of currents.

Stability Notes:

Very good stability in current and winds to 50 knots; good in ice floes; very good in short, choppy waves to 2' and long rolling waves to 7' high.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommended practice.

Replaces buoy No. CR-14765A.

Manufacturers:

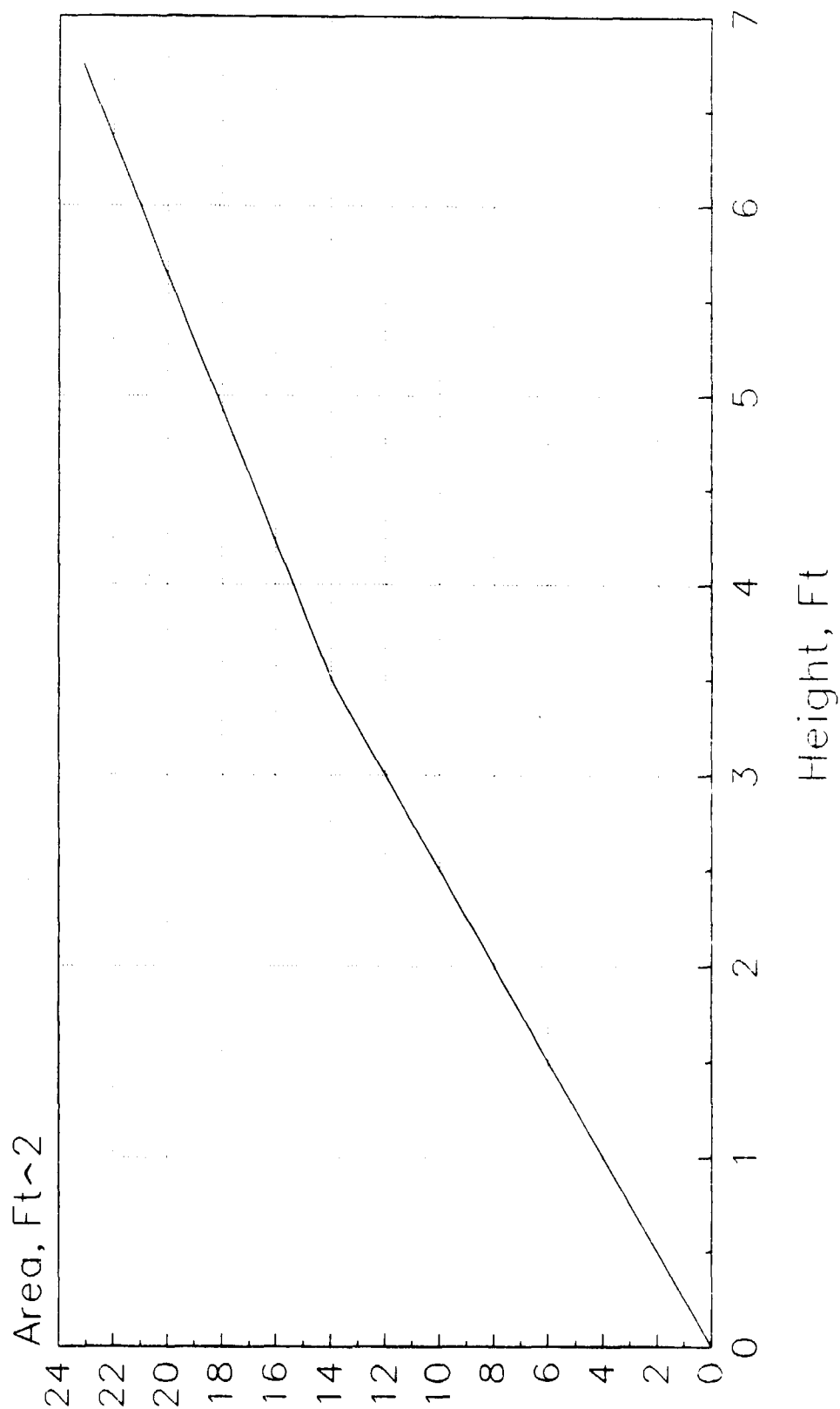
Source of Design:                    Canadian Coast Guard

Drawing Reference:                    Canada 2 & 20



# FA-2011 1.2m River Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: FA-2012 0.6m Mackenzie River-C

Country of Use: Canada

Function: Unlighted river buoy, with Can daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 271 Lbs.

Buoy Draft: 4.70 Ft.

Overall Buoy Length: 8.79 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.00 Ft.

Freeboard: No Mooring: 3.54 Ft.  
Minimum: 3.15 Ft.

Pounds Per Inch Immersion: 16 Lbs.

Metacentric Height: 0.21 Ft.

Reserve Buoyancy: 619 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: Horiz. Bhd, near WL

Hull Type: Cylindrical

Counterweight Type: External Plate

#### RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 6.7 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.500 In.  
Type: Steel Wire Rope

Sinker Size: 1,323 Lbs.

Topmark Type: none

Number of Padeyes: 2

#### OPERATING CHARACTERISTICS

Operating Environment: SM, rivers

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.5 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 95 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            8.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

The buoy's impact resistance to collisions with logs, driftwood and ice is acceptable.

Special Features:

Buoy has flat plate keel/rudder with ballast welded at bottom, and 5 vertical positions for lateral attachment of the mooring to accommodate a range of currents.

Stability Notes:

This buoy is not well suited for tidal conditions. Has acceptable stability in winds to 30 knots; acceptable stability in short choppy waves to 7' and breaking waves to 10'. The buoy performs well in ice floes.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommended practice.

Replaces buoy no. CR-15356.

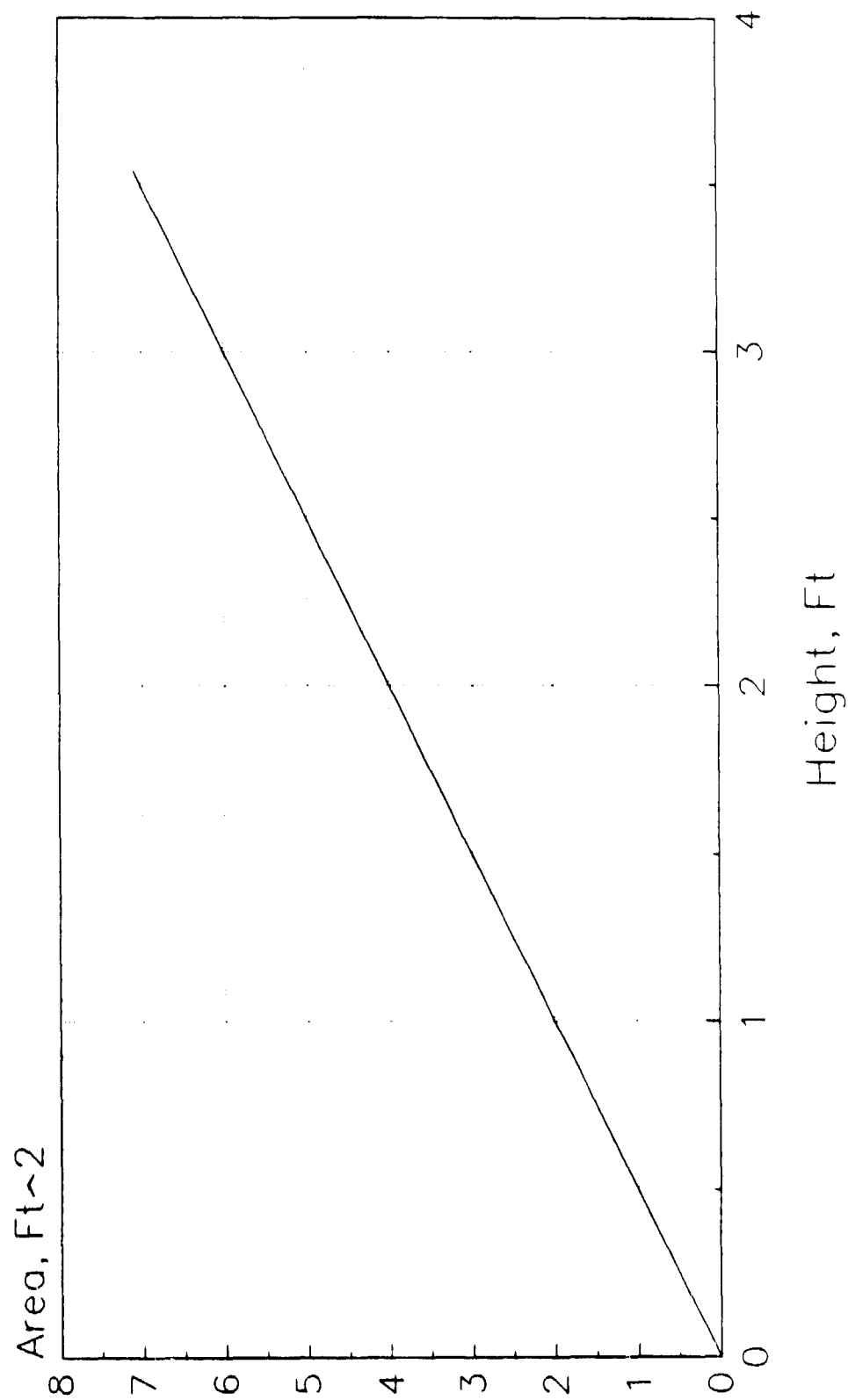
Manufacturers:

Source of Design:                    Canadian Coast Guard

Drawing Reference:                    Canada 2 & 21

# FA-2012 0.6m Mackenzie River-C

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: FA-2013 0.6m Mackenzie River-N

Country of Use: Canada

Function: Unlighted river buoy, Conical (Nun)  
daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 218 Lbs.

Buoy Draft: 4.39 Ft.

Overall Buoy Length: 8.72 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.00 Ft.

Freeboard: No Mooring: 3.85 Ft.  
Minimum: 3.41 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.46 Ft.

Reserve Buoyancy: 296 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: Horiz. Bhd. near WL

Hull Type: Conical

Counterweight Type: External Plate

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 4.3 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.500 In.  
Type: Steel Wire Rope  
Sinkers Size: 1,323 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: SM, rivers  
Nominal Visual Range of Daymark: 1.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 4.5 Kts.  
Mooring Depth: Minimum: 5 Ft.  
Maximum: 82 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                            8.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

The buoy's impact resistance to collisions with logs, driftwood and ice is acceptable.

Special Features:

Buoy has flat plate keel/rudder with ballast welded at bottom, and 5 vertical positions for lateral attachment of the mooring to accomodate a range of currents.

Stability Notes:

This buoy is not well suited for tidal conditions. It has acceptable stability in winds to 30 knots; acceptable stability in short, choppy waves to 7' and breaking waves to 10'. The buoy performs well in ice floes.

General Notes

Minimum mooring depth based on buoy draft, not CCG recommended practice.

Replaces buoy No. CR-15356

Manufacturers:

Source of Design:                        Canadian Coast Guard

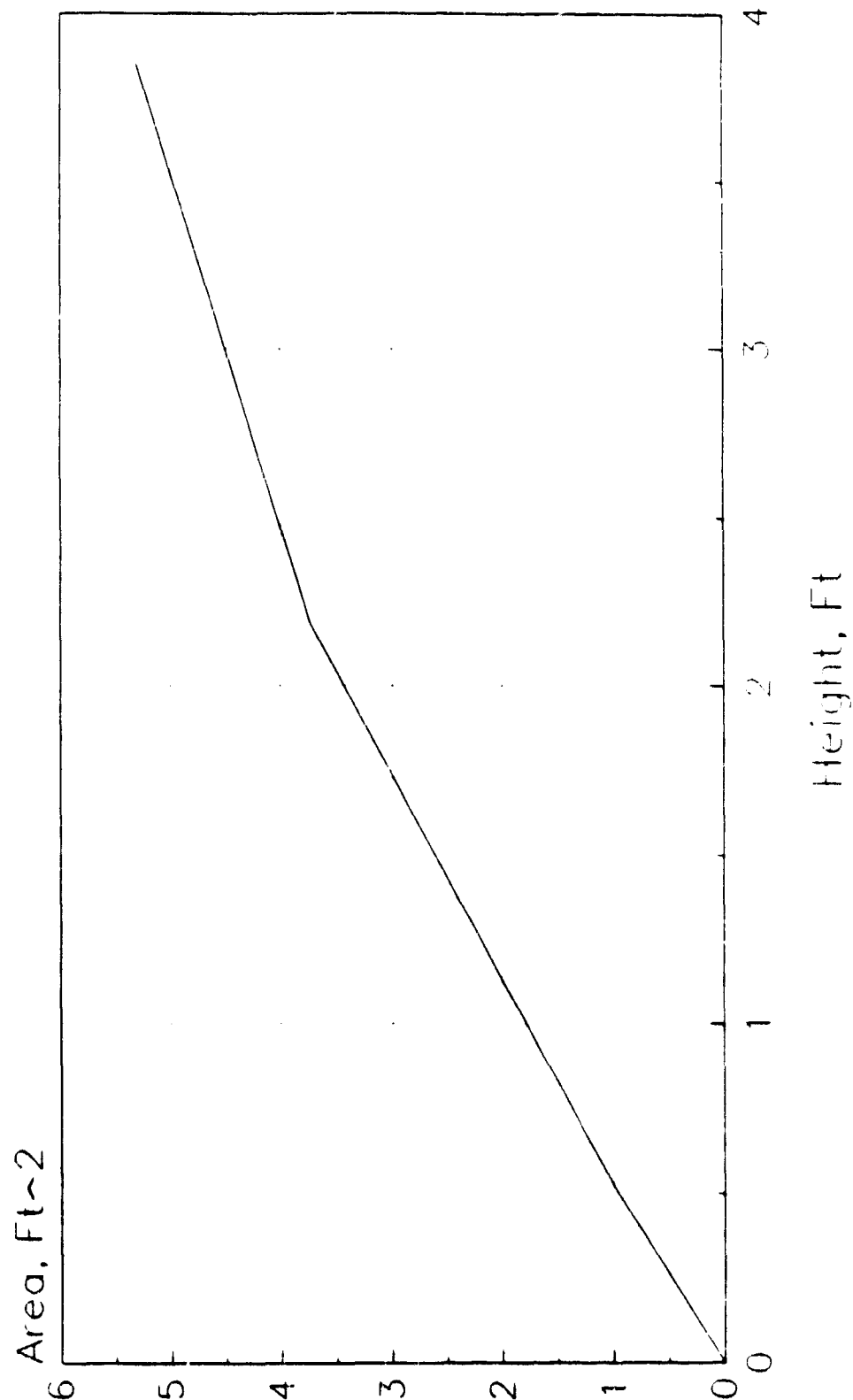
Drawing Reference:                        Canada 2 & 22



# FA-2013 0.6m Mackenzie River-N

Cumulative Area

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## GENERAL INFORMATION

Name of Buoy: FA-2014 Canol Type Boat

Country of Use: Canada

Function: Unlighted river buoy, with Can or  
conical daymark.

For swift current & shallow water.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 147 Lbs.

Buoy Draft: 1.20 Ft.

Overall Buoy Length: 7.97 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 1.67 Ft.

Freeboard: No Mooring: 0.45 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : 5000 Series Aluminum  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: none

Hull Type: Boat

Counterweight Type: none

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 3.5 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.375 In.  
Type: Steel Chain  
Sinkers Size: 1,575 Lbs.  
Topmark Type: none  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PF, rivers  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 8.0 Kts.  
Mooring Depth: Minimum: 2 Ft.  
Maximum: 26 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$0  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 8.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Buoy has a large flat plate skeg for directional stability.

Stability Notes:

It has poor stability in winds over 22 knots, ice floes and icing, and any wave pattern over 2' high.

General Notes

Minimum mooring depth based on buoy draft. For conical daymark, buoy weight = 140 lbs and daymark area = 2.3 sq. ft. Replaces buoy No's CR-15291 and CR-15457.

Manufacturers:

Source of Design: Canadian Coast Guard

Drawing Reference: Canada 2 & 25

## GENERAL INFORMATION

Name of Buoy: FA-2015 0.4m Mackenzie River-C

Country of Use: Canada

Function: Unlighted river buoy with Can daymark.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 159 Lbs.

Buoy Draft: 4.14 Ft.

Overall Buoy Length: 6.14 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 1.51 Ft.

Freeboard: No Mooring: 1.76 Ft.  
Minimum: 1.48 Ft.

Pounds Per Inch Immersion: 9 Lbs.

Metacentric Height: 0.95 Ft.

Reserve Buoyancy: 165 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: Horiz. Bhd. near WL

Hull Type: Cylindrical

Counterweight Type: External Plate

## GENERAL INFORMATION

Name of Buoy: L-3 (10.5x38 L) Battery Type

Country of Use: Japan

Function: Lighted offshore buoy.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	0 Lbs.
Buoy Draft:	0.00 Ft.
Overall Buoy Length:	38.05 Ft.
Focal Height of Light:	0.00 Ft.
Buoy Beam or Diameter:	10.50 Ft.
Freeboard:	No Mooring: 0.00 Ft. Minimum: 0.00 Ft.
Pounds Per Inch Immersion:	462 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Steel Topmark : Counterweight: Cast Iron
Coating/Coloring System:	Zinc primer/synth. resin paint
Subdivision:	None
Hull Type:	Cylindrical
Counterweight Type:	External tail tube

#### RELATED EQUIPMENT

Number of Power Sources: 20

Type of Power Sources: Air depolarized primary cells

Lighting Equipment: 250mm electric lantern

Sound Equipment: Optional electric fog signal

Other Payload: Alarm & marking sys/Opt.rad.r.

Daymark Area: 17.9 Sq. Ft.

Bridle Size: Chain Size: 1.260 In.  
Length : 0.0 Ft

Mooring Line: Size: 1.496 In.  
Type: Steel Chain

Sinker Size: 13,230 Lbs.

Topmark Type: Optional Lateral

Number of Padeyes: 4

#### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 330 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$31,850  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system.

Stability Notes:

General Notes

Metecentric height based on buoy including power source.

Manufacturers: Zeni, Lite Buoy Co.

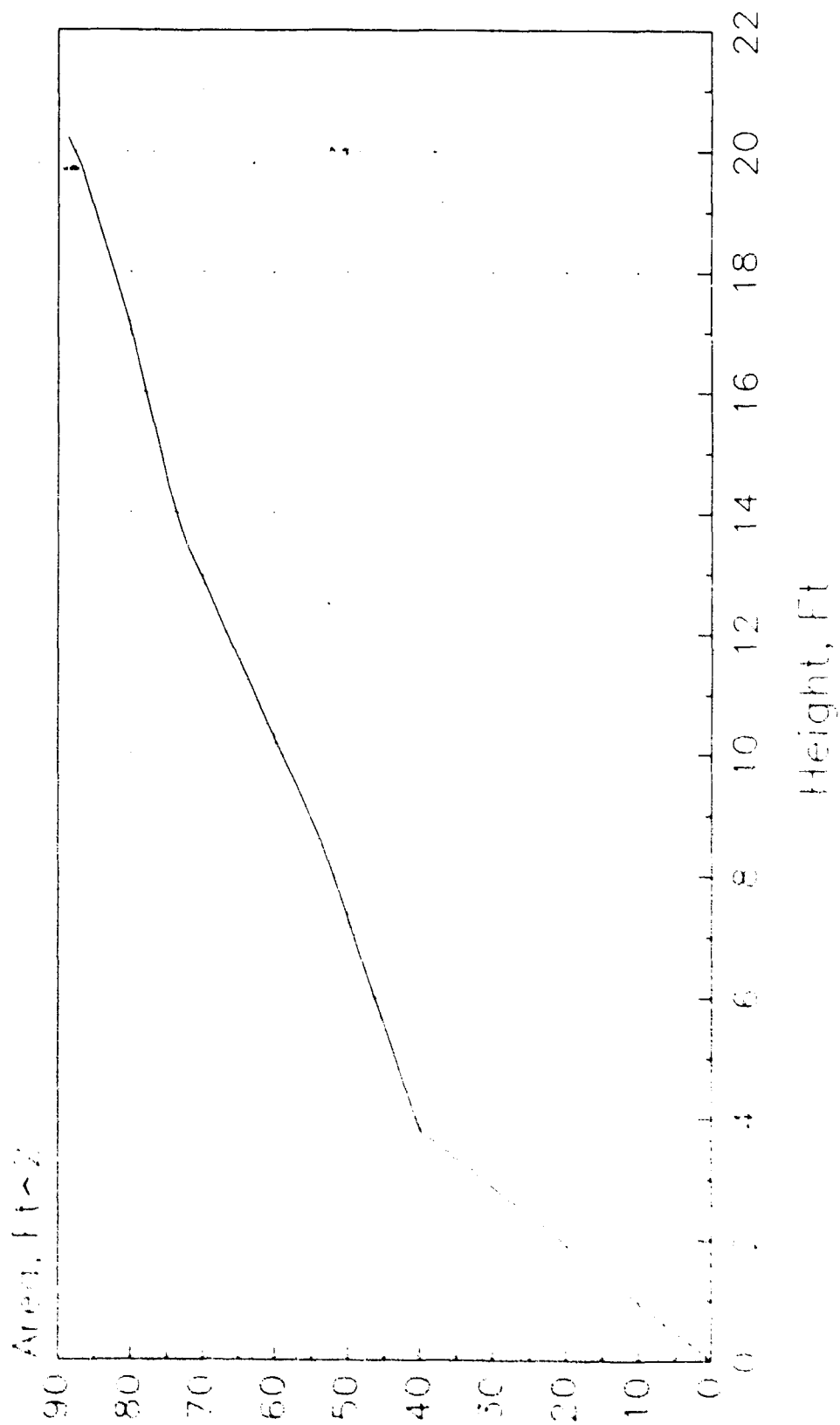
Source of Design: Maritm. Safety Agency

Drawing Reference: Japan 1



# L-3 (10.5x38 L) Wave Generator

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: L-3 (10.5x38 L) Wave Generator

Country of Use: Japan

Function: Lighted offshore buoy, with wave  
activated electric power generator.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 23,443 Lbs.

Buoy Draft: 15.13 Ft.

Overall Buoy Length: 38.05 Ft.

Focal Height of Light: 21.53 Ft.

Buoy Beam or Diameter: 10.50 Ft.

Freeboard: No Mooring: 4.40 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 462 Lbs.

Metacentric Height: 4.27 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision: None

Hull Type: Cylindrical

Counterweight Type: External tail tube

RELATED EQUIPMENT

Number of Power Sources: 21  
Type of Power Sources: 20 Storage batt./wave act.gen.  
Lighting Equipment: 250mm electric lantern  
Sound Equipment: Optional electric fog signal  
Other Payload: Alarm & marking sys/opt.rad.r.  
Daymark Area: 17.9 Sq. Ft.  
Bridle Size: Chain Size: 1.260 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.496 In.  
Type: Steel Chain  
Sinkers Size: 13,230 Lbs.  
Topmark Type: Optional Lateral  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.2 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 330 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$31,850  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system.

Stability Notes:

General Notes

Metecentric height based on buoy including power source.

Manufacturers: Zeni Lite Buoy Co.

Source of Design: Maritm. Safety Agency

Drawing Reference: Japan 1 & 6

## GENERAL INFORMATION

Name of Buoy: L-4 (20x53 LR) Wave Generator

Country of Use: Japan

Function: Lighted offshore buoy, with wave  
activated electric power generator, for  
significant traffic routes.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 77,100 Lbs.

Buoy Draft: 18.54 Ft.

Overall Buoy Length: 52.66 Ft.

Focal Height of Light: 31.43 Ft.

Buoy Beam or Diameter: 19.69 Ft.

Freeboard: No Mooring: 4.27 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 1,626 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling : Foam  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision: Foamfilled outercomp

Hull Type: Cylindrical

Counterweight Type: External tail tube

### RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Storage batt's./wave act. gen.

Lighting Equipment: 375mm electric lantern

Sound Equipment: Optional electric fog signal

Other Payload: Alarm & marking sys/radar refl

Daymark Area: 71.9 Sq. Ft.

Bridle Size: Chain Size: 2.756 In.  
Length : 0.0 Ft.

Mooring Line: Size: 2.756 In.  
Type: Steel Chain

Sinker Size: 220,500 Lbs.

Topmark Type: Optional Lateral

Number of Padeyes: 4

### OPERATING CHARACTERISTICS

Operating Environment: EF

Nominal Visual Range of Daymark: 4.4 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 6.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   24 Mos.

Maintenance Notes:

Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system. Fender strip around body.

Stability Notes:

General Notes

Weight, draft, freeboard and focal height based on buoy including power source.

The price of this buoy is \$120,000.

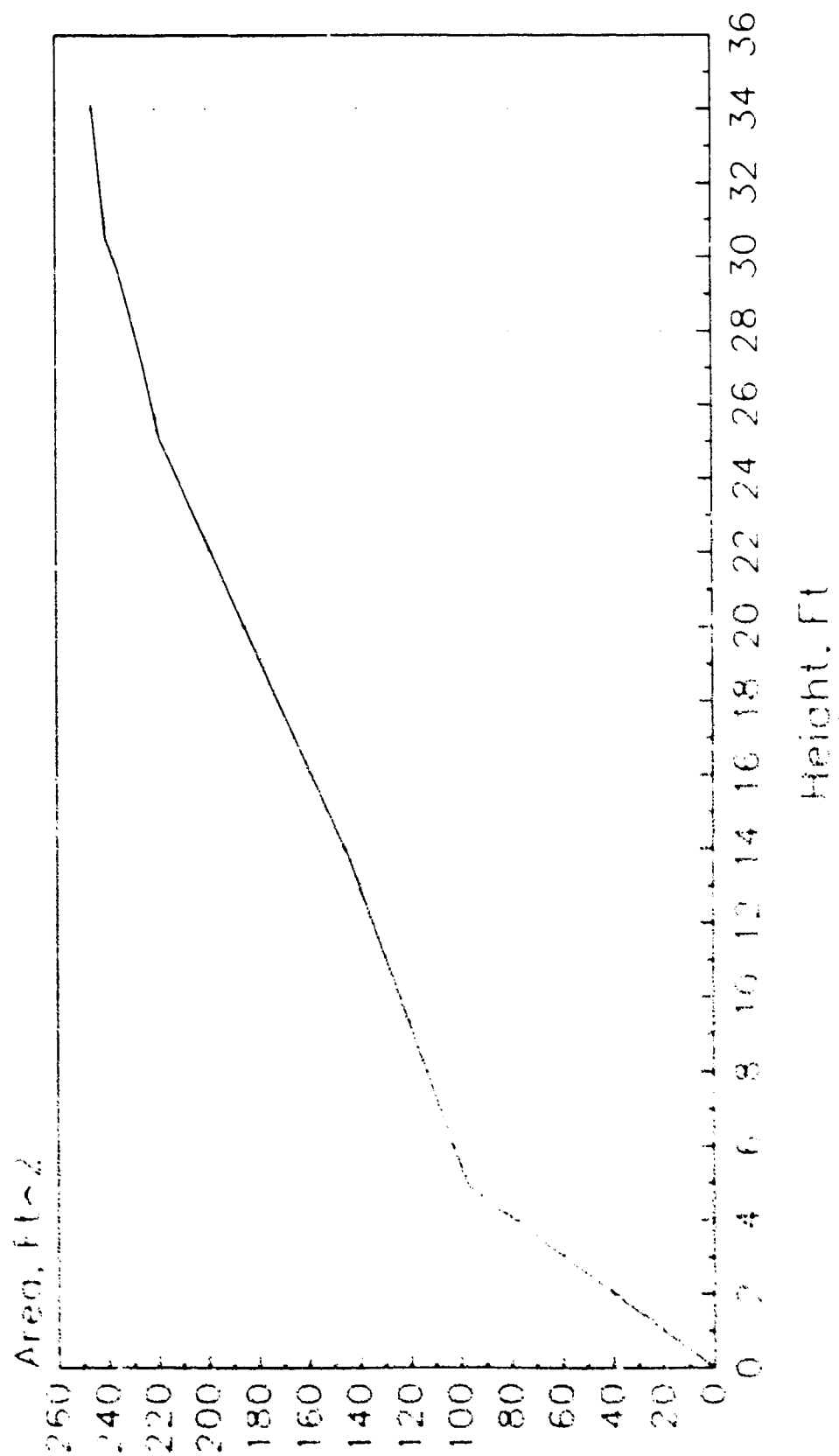
Manufacturers:                            Ryokuseicha Corp.

Source of Design:                        Maritm.Safety Agency

Drawing Reference:                        Japan 1 & 7

# L-4 (20x53 LR) Wave Generator

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: L-5 (13.1x23 LR)  
Country of Use: Japan  
Function: Lighted offshore buoy.

Date Of Last Update For This Record: 10/12/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 22,050 Lbs.  
Buoy Draft: 7.00 Ft.  
Overall Buoy Length: 22.90 Ft.  
Focal Height of Light: 14.10 Ft.  
Buoy Beam or Diameter: 13.12 Ft.  
Freeboard: No Mooring: 2.00 Ft.  
Minimum: 0.00 Ft.  
Pounds Per Inch Immersion: 723 Lbs.  
Metacentric Height: 0.00 Ft.  
Reserve Buoyancy: 0 Lbs.  
Wave Motion Response: Wave following  
Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:  
Coating/Coloring System: Zinc primer/synth. resin paint  
Subdivision:  
Hull Type: Discus  
Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Air depolarized primary cells

Lighting Equipment: 250 or 300mm electric lantern

Sound Equipment: Optional electric fog signal

Other Payload: Alarm & marking sys/radar refl

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.496 In.  
Type: Steel Chain

Sinker Size: 22,050 Lbs.

Topmark Type: Optional Lateral

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: EF

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 5.0 Kts.

Mooring Depth: Minimum: 8 Ft.  
Maximum: 180 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

## Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system. Fender strip around body. Centerline single point mooring.

Stability Notes:

General Notes

Manufacturers:

Source of Design: Maritm.Safety Agency

Drawing Reference: Japan 1

## GENERAL INFORMATION

Name of Buoy: L-6 (16x25 LR)

Country of Use: Japan

Function: Lighted offshore buoy, with discus type  
hull for strong current and seas.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	22,930 Lbs.
Buoy Draft:	3.80 Ft.
Overall Buoy Length:	25.03 Ft.
Focal Height of Light:	19.70 Ft.
Buoy Beam or Diameter:	16.40 Ft.
Freeboard:	No Mooring: 3.10 Ft. Minimum: 0.50 Ft.
Pounds Per Inch Immersion:	1,129 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	6,400 Lbs.
Wave Motion Response:	Wave Following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Steel Topmark : Counterweight: Concrete
Coating/Coloring System:	Zinc primer/Synth. resin Paint
Subdivision:	2 Compartment
Hull Type:	Discus
Counterweight Type:	Internal

## RELATED EQUIPMENT

Number of Power Sources: 40  
Type of Power Sources: Air Depolarized primary cell  
Lighting Equipment: Electric lantern, 250 or 300mm  
Sound Equipment: Optional electric fog signal  
Other Payload: Alarm & marking sys/radar refl  
Daymark Area: 98.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.050 In.  
Type: Steel Chain  
Sinkers Size: 88,200 Lbs.  
Topmark Type: Optional Lateral  
Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: EF  
Nominal Visual Range of Daymark: 3.6 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 6.0 Kts.  
Mooring Depth: Minimum: 4 Ft.  
Maximum: 330 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost: Replacement: \$48,000  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

## Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system. Fender strip around body. Centerline single point mooring.

## Stability Notes:

## General Notes

Weight, draft, freeboard and focal height based on buoy including power source.

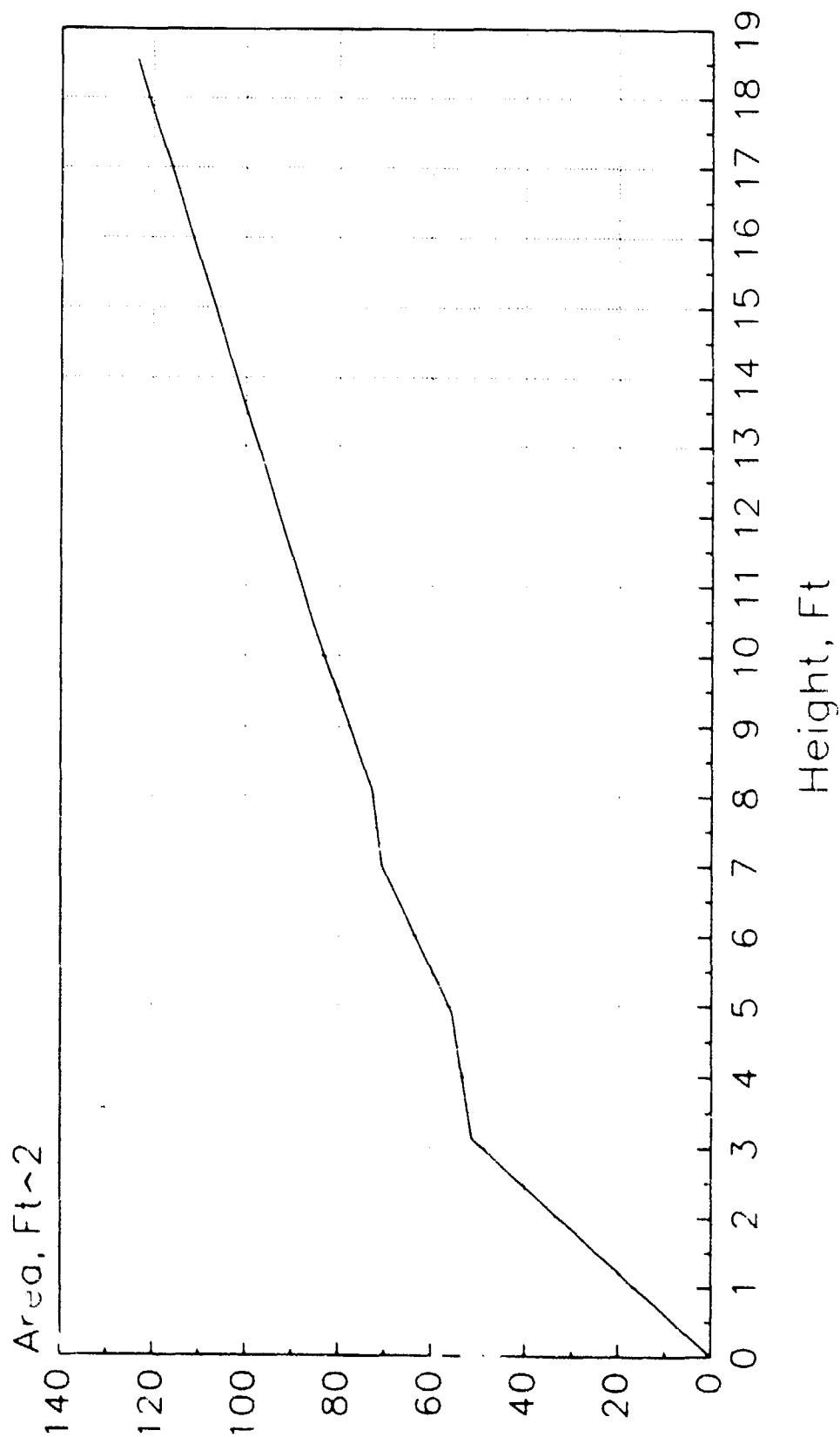
Manufacturers: Zeni Lite Buoy Co.

Source of Design: Maritm.Safety Agency

Drawing Reference: Japan 1 & 8

# L-6 (16x25 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: L-H (6.9x22 L)

Country of Use: Japan

Function: Lighted buoy, for deep protected waters.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,280 Lbs.

Buoy Draft: 8.43 Ft.

Overall Buoy Length: 22.41 Ft.

Focal Height of Light: 13.17 Ft.

Buoy Beam or Diameter: 6.89 Ft.

Freeboard: No Mooring: 2.43 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 199 Lbs.

Metacentric Height: 1.02 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision: None

Hull Type: Cylindrical

Counterweight Type: External tail tube



## RELATED EQUIPMENT

Number of Power Sources: 10  
Type of Power Sources: Air depolarized primary cells  
Lighting Equipment: 200mm electric lantern  
Sound Equipment: Optional electric fog signal  
Other Payload: Alarm & marking sys/opt.rad.r.  
Daymark Area: 5.2 Sq. Ft.  
Bridle Size: Chain Size: 1.181 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.260 In.  
Type: Steel Chain  
Sinkers Size: 8,820 Lbs.  
Topmark Type: Optional Lateral  
Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: PM  
Nominal Visual Range of Daymark: 2.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

## Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system.

Stability Notes:

## General Notes

Metecentric height based on buoy including power source.

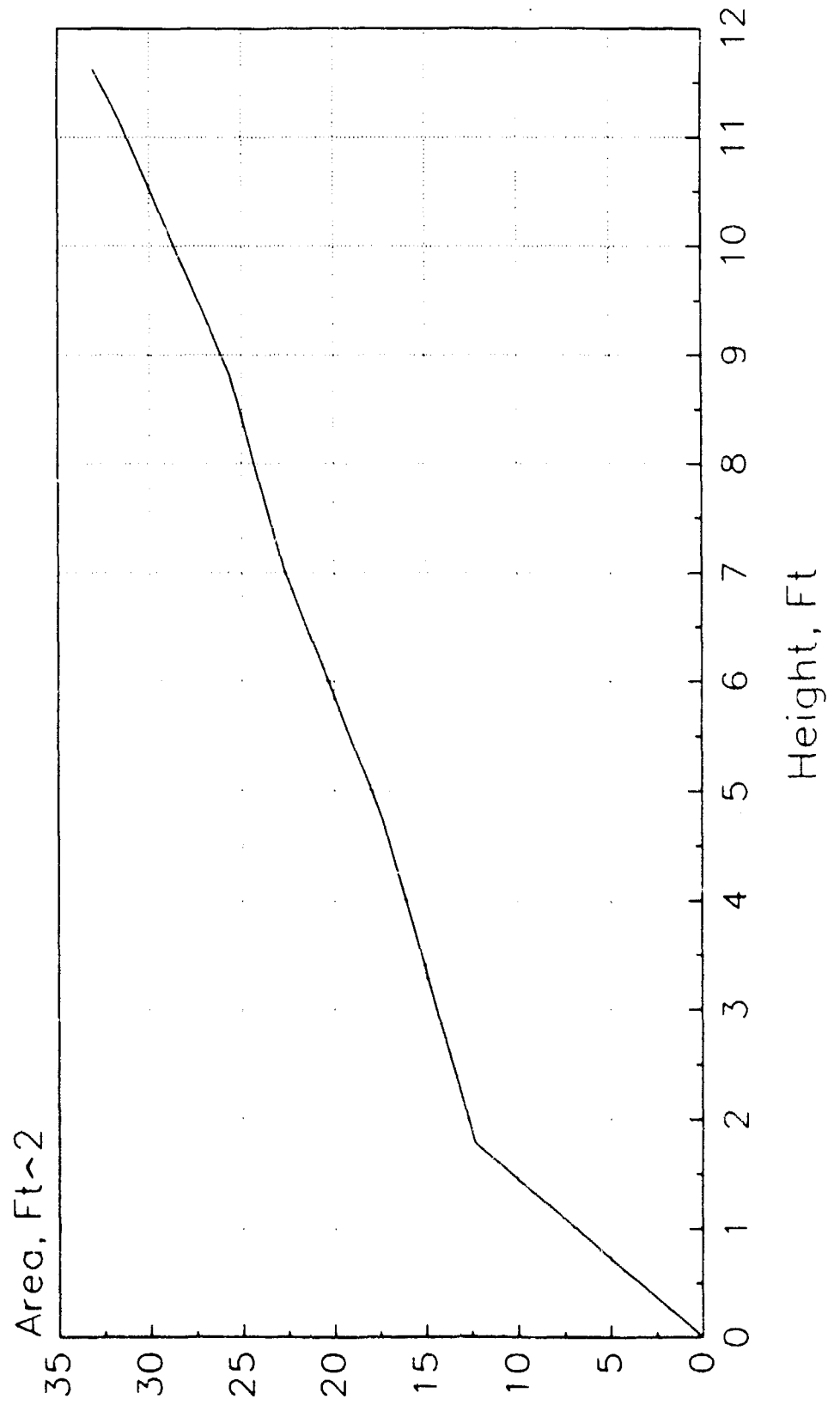
Manufacturers: Gakuyo Toki Kogyo Co

Source of Design: Maritm.Safety Agency

Drawing Reference: Japan 1 & 9

L-H (6.9x22 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: L-U (7.9x20 L)

Country of Use: Japan

Function: Lighted buoy, for shallow water.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 13,550 Lbs.

Buoy Draft: 5.62 Ft.

Overall Buoy Length: 20.37 Ft.

Focal Height of Light: 13.96 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 1.90 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 260 Lbs.

Metacentric Height: 1.12 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision: None

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 20

Type of Power Sources: Air depolarized primary cells

Lighting Equipment: 200mm electric lantern

Sound Equipment: Optional electric fog signal

Other Payload: Alarm & marking sys/opt.rad.r.

Daymark Area: 6.2 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.260 In.  
Type: Steel Chain

Sinker Size: 8,820 Lbs.

Topmark Type: Optional Lateral

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement: \$18,430  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   24 Mos.

Maintenance Notes:

## Special Features:

Equipped with lighted buoy monitoring and alarm radio transmitter, including collision marking system. Single point mooring attachment.

Stability Notes:

## General Notes

Metacentric height based on buoy weight including power source.

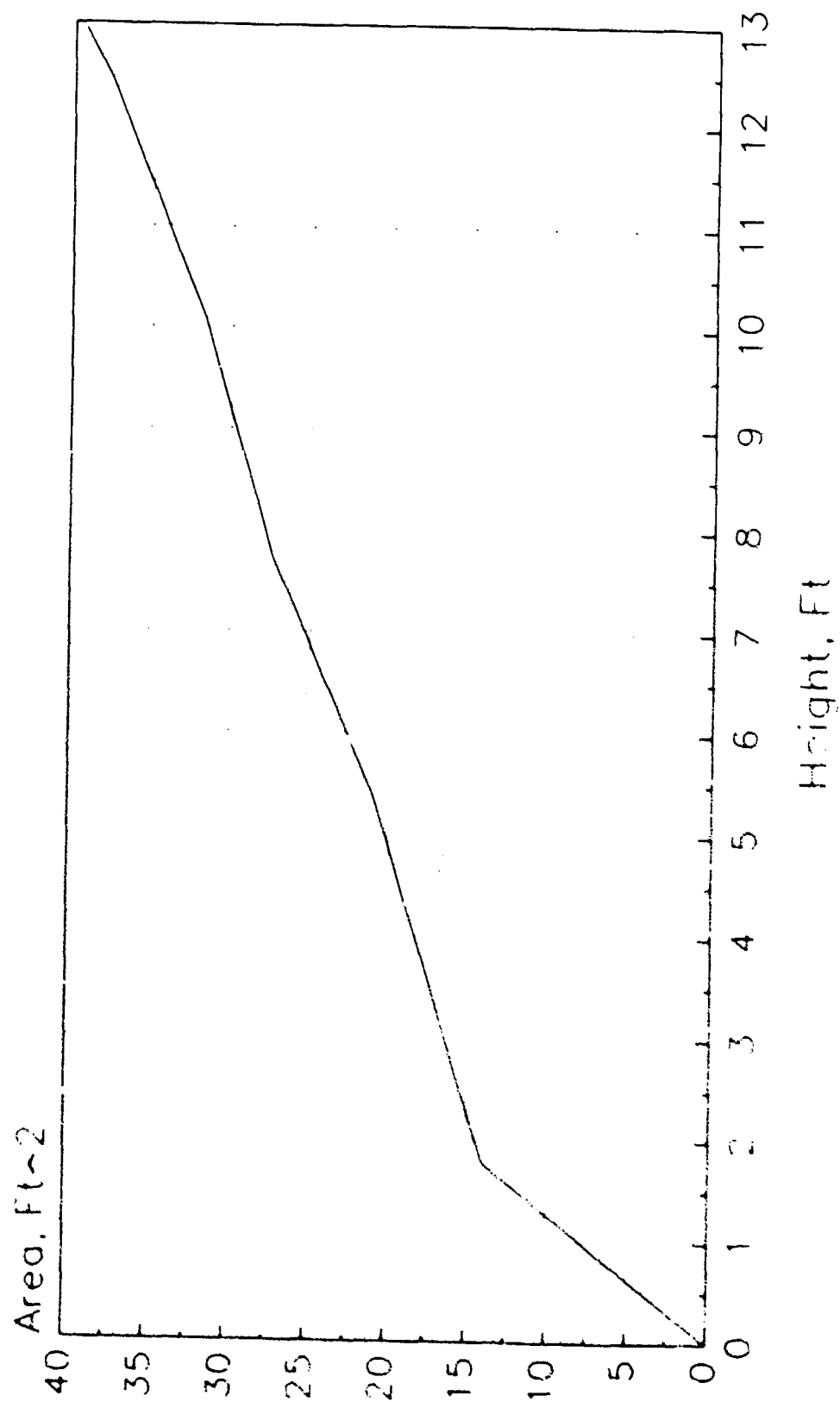
Manufacturers:                            Gakuyo Toki Kogyo Co

Source of Design:                        Marita Safety Agency

Drawing Reference:                        Japan 1 & 10

L-U (7.9x20 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Segiyosetoho Resilient Beacon

Country of Use: Japan

Function: Lighted articulated spar, for precise positioning in exposed deep water.

Date Of Last Update For This Record: 07/20/50

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 86.95 Ft.

Overall Buoy Length: 136.65 Ft.

Focal Height of Light: 47.57 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 102 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled (fixed)

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Articulated Spar

Counterweight Type:



RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Primary batteries or solar

Lighting Equipment: 375mm electric lantern

Sound Equipment: Optional electric fog signal

Other Payload: Radar refl, monit./alarm Trans

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Universal joint

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 0

OPERATING CHARACTERISTICS

Operating Environment: EM, deep water

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 96 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    60 Mos.

Maintenance Notes:

Compliance of system minimizes damage due to vessel collision, compared to a fixed structure.

Special Features:

Articulated mooring maintains precise position, (approx. zero watch circle).

Stability Notes:

Instable without mooring.

General Notes

Manufacturers:                            Zeni Lite Buoy Co.

Source of Design:                        Maritm.Safety Agency

Drawing Reference:                        Japan 13

## GENERAL INFORMATION

Name of Buoy: U-H Conical (NUN)

Country of Use: Japan

Function: Unlighted inshore buoy, with Conical  
(NUN) daymark.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,240 Lbs.

Buoy Draft: 6.38 Ft.

Overall Buoy Length: 14.71 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 8.33 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision:

Hull Type: Conical top & bottom

Counterweight Type: External bolt-on

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.260 In.  
Type: Steel Chain

Sinker Size: 8,820 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.7 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 7 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Has single mooring attachment lug.

Stability Notes:

General Notes

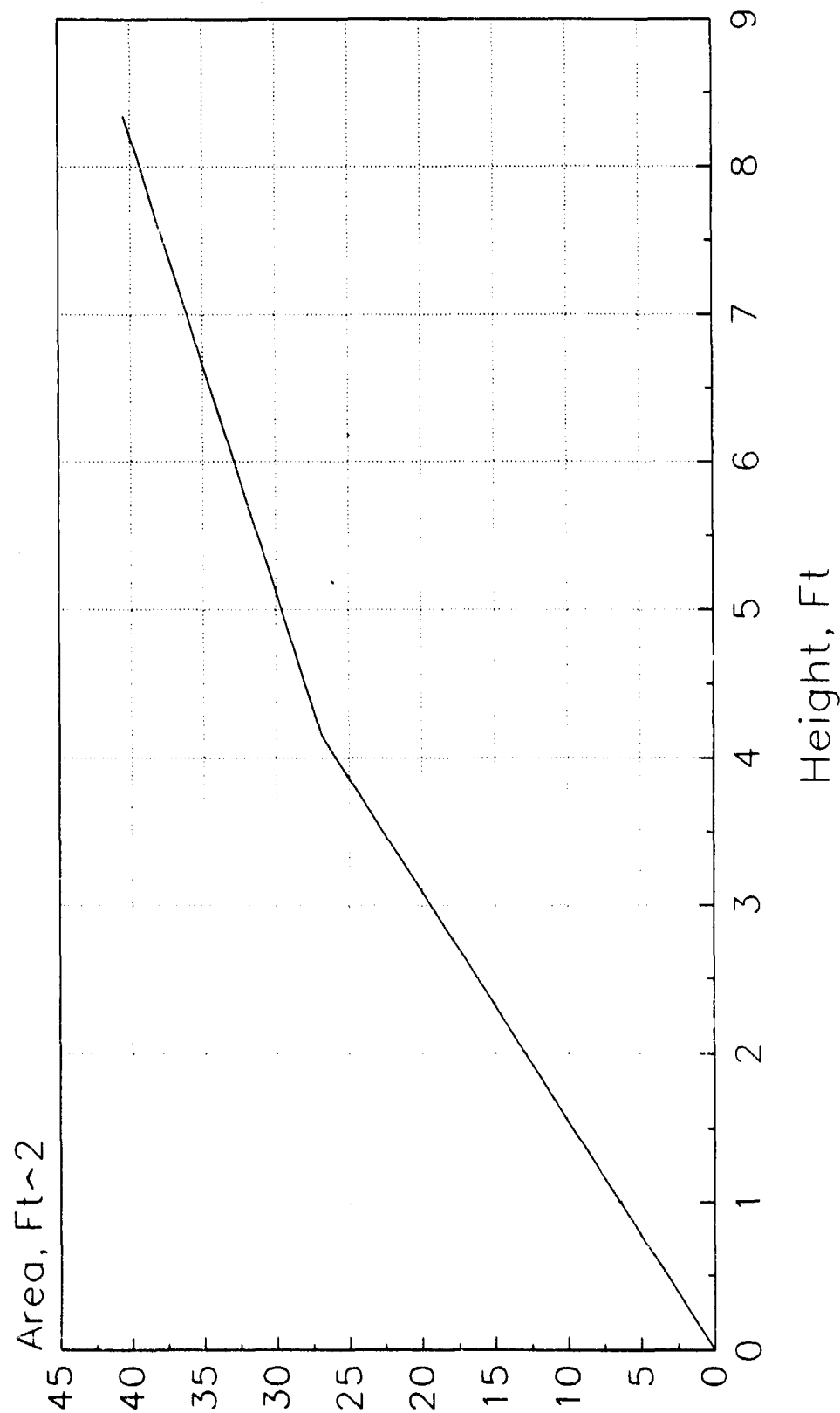
Manufacturers:                              Gakuyo Toki Kogyo Co

Source of Design:                            Marit. Safety Agency

Drawing Reference:                           Japan 1 & 11

# U-H Conical (NUN)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: U-H Cylinder (CAN)

Country of Use: Japan

Function: Unlighted inshore buoy, with Can  
daymark.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,800 Lbs.

Buoy Draft: 8.02 Ft.

Overall Buoy Length: 15.37 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 6.89 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Zinc primer/synth. resin paint

Subdivision:

Hull Type: Conical bott/Can top

Counterweight Type: External bolt-on

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.260 In.  
Type: Steel Chain

Sinker Size: 8,820 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 9 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Single mooring attachment lug.

Stability Notes:

General Notes

Manufacturers: Gakyo Toki Kogyo Co.

Source of Design: Maritm.Safety Agency

Drawing Reference: Japan 1 & 11

## GENERAL INFORMATION

Name of Buoy: U-HP Plastic CAN

Country of Use: Japan

Function: Unlighted CAN buoy, fiberglass construction, with internal radar reflector.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,464 Lbs.

Buoy Draft: 5.87 Ft.

Overall Buoy Length: 14.08 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 7.55 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 2.36 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Foam  
Tower :  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Tapered cylinder

Counterweight Type: External bolt-on

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: None

Lighting Equipment: None

Sound Equipment: None

Other Payload: Radar Reflector, Bird Scare

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.260 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: None

Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 3.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

## Special Features:

Internal SR-6 radar reflector. Bird scare on top. Single mooring attachment on bottom of ballast weight, which is bolted to a flanged pipe extension.

Stability Notes:

## General Notes

Radar reflector is omnidirectional.

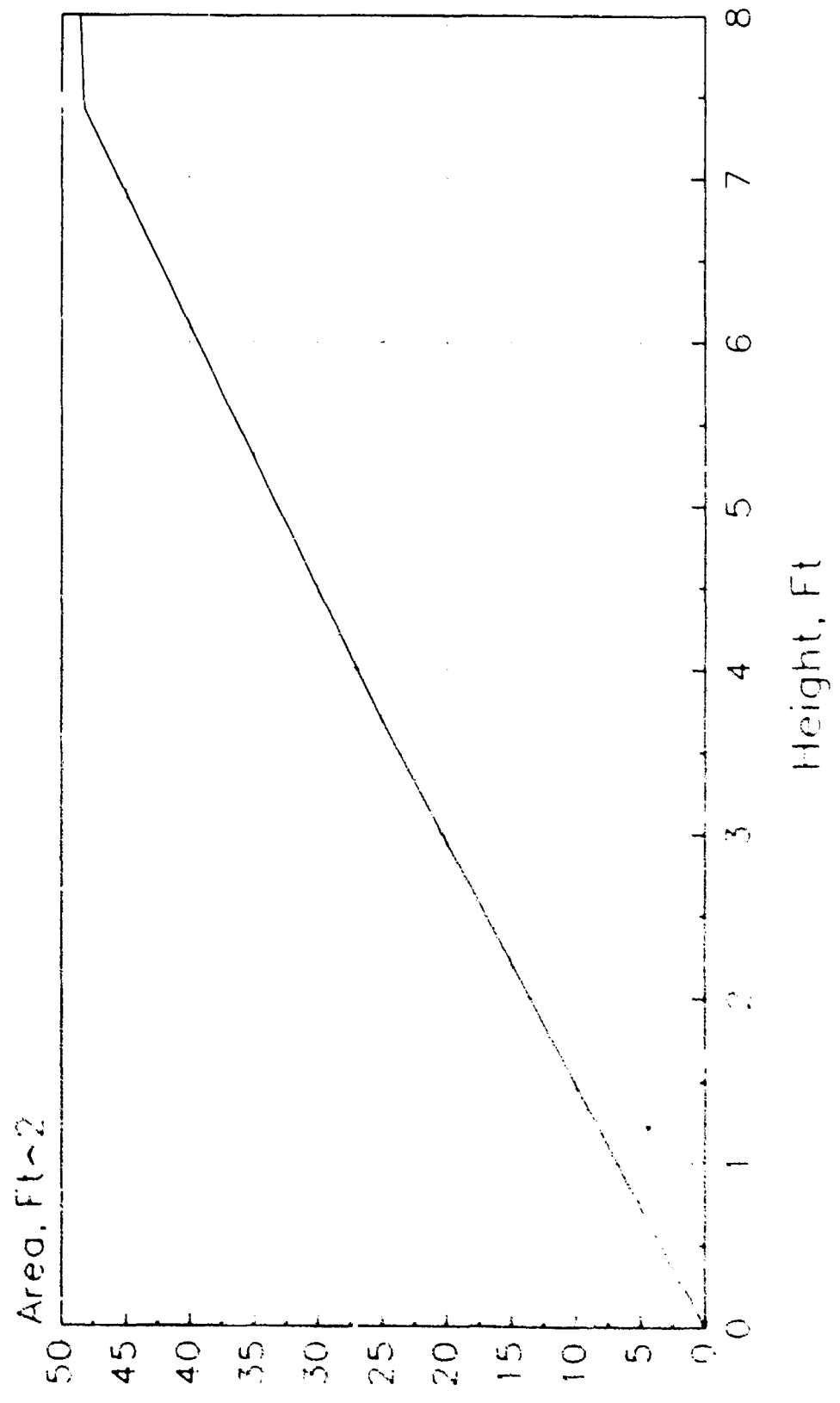
Manufacturers: Nippon Koki Kogyo Co

Source of Design: Nippon Koki Kogyo Co

Drawing Reference: Japan 12

# U-HP Plastic Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: LP-1A (7.2 x 27 LR)

Country of Use: Japan MFG 1

Function: Lighted inshore buoy, fiberglass  
construction, with radar reflector.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	4,110 Lbs.
Buoy Draft:	12.10 Ft.
Overall Buoy Length:	27.33 Ft.
Focal Height of Light:	14.64 Ft.
Buoy Beam or Diameter:	7.22 Ft.
Freeboard:	No Mooring: 2.17 Ft. Minimum: 0.00 Ft.
Pounds Per Inch Immersion:	219 Lbs.
Metacentric Height:	3.64 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Fiberglass GRP Hull Filling : Foam Tower : Fiberglass GRP Topmark : Counterweight: Cast Iron
Coating/Coloring System:	Moulded-in color
Subdivision:	Foam filled
Hull Type:	Cylindrical
Counterweight Type:	External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 10  
Type of Power Sources: Air depolarized primary cells  
Lighting Equipment: 250mm electric lantern  
Sound Equipment: None  
Other Payload: SR-6 Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Opt. Cardinal or Lat  
Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 3.0 Nmi.  
Radar Range: 5.6 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

## Special Features:

Centerline single point mooring.  
Weather tight conical tower enclosing batteries.

## Stability Notes:

Metacentric height based on buoy weight including batteries.

## General Notes

Radar reflector is omnidirectional.

Manufacturers:                                Nippon Koki Kogyo Co

Source of Design:                              Nippon Koki Kogyo Co

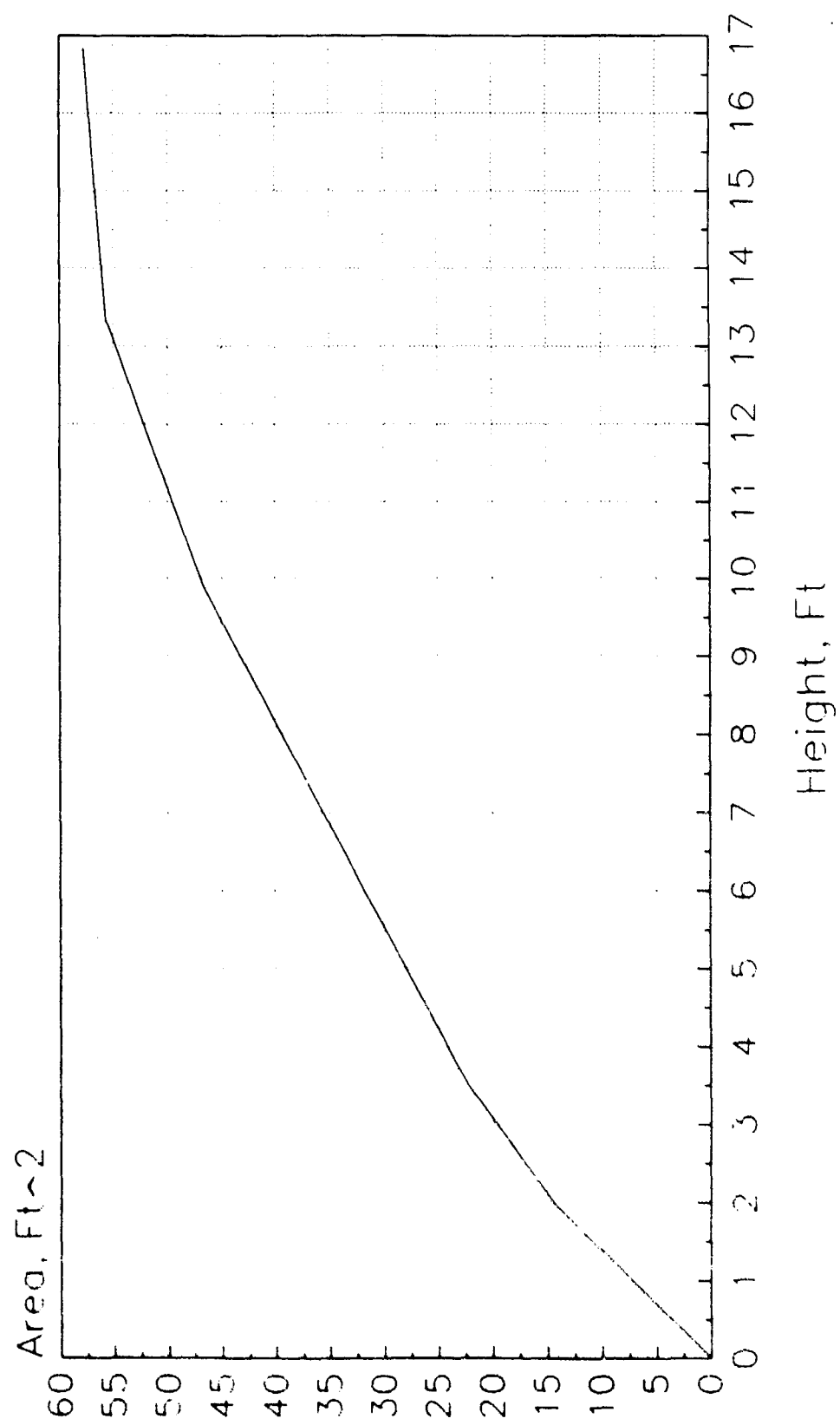
Drawing Reference:                            Japan MFG 1-3



LP-1A (7.2 x 27 LR)

Cumulative Area

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## GENERAL INFORMATION

Name of Buoy: NKK 1.5m (4.9 x 22 LR)

Country of Use: Japan MFG 1

Function: Lighted inshore buoy, with radar reflector.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 9.10 Ft.

Overall Buoy Length: 21.72 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 2.30 Ft.  
Minimum: 1.64 Ft.

Pounds Per Inch Immersion: 102 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Air depolarized primary cells

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: SR-6 Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Opt.Cardinal or Lat.

Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 2.3 Nmi.

Radar Range: 4.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 10 Ft.  
Maximum: 80 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

## Special Features:

Single point mooring attachment at bottom of tail tube.

Stability Notes:

## General Notes

Radar reflector is omnidirectional.

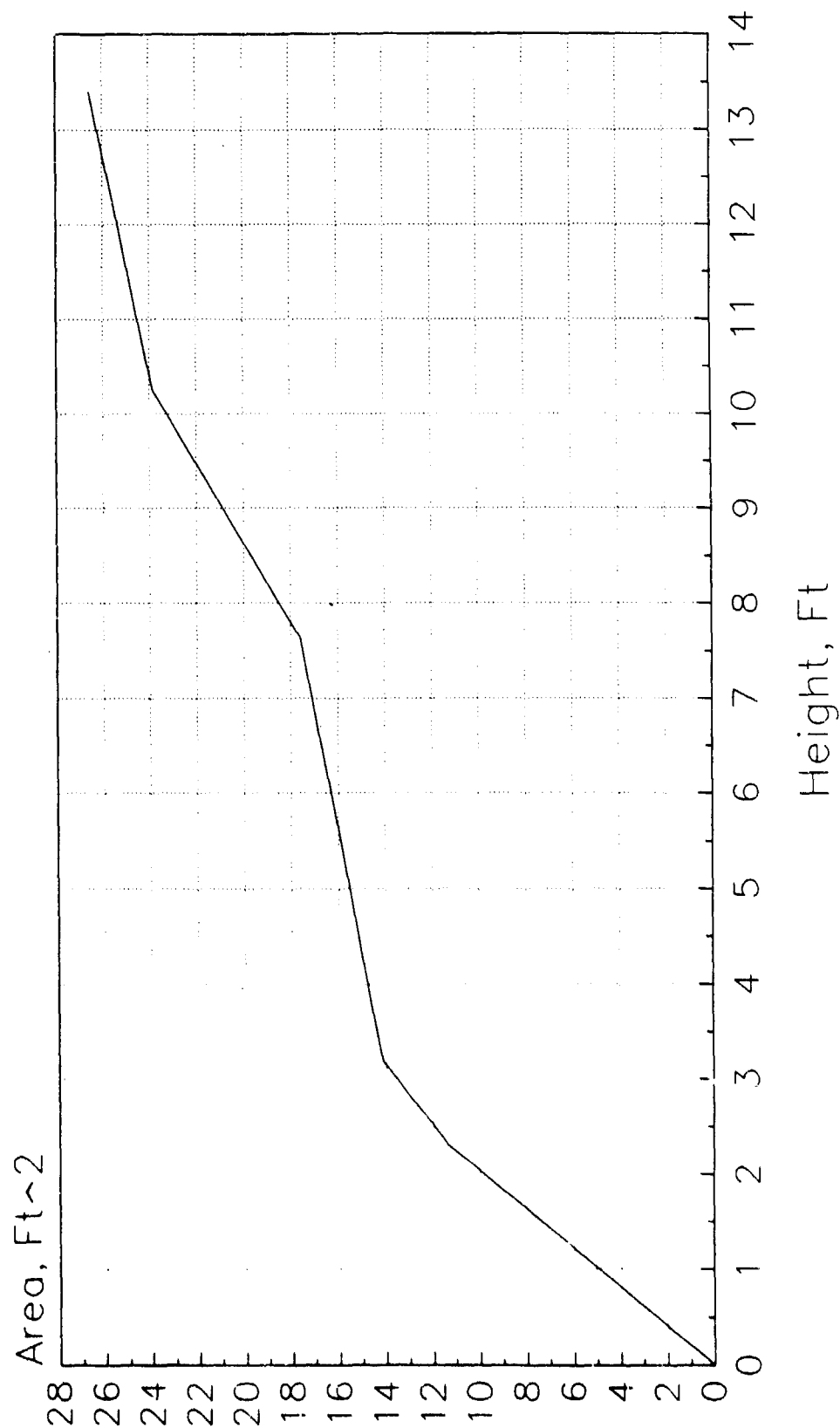
Manufacturers: Nippon Koki Kogyo Co

Source of Design: Nippon Koki Kogyo Co

Drawing Reference: Japan MFG 1-2

NKK 1.5m (4.9 x 22 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: NLB-1000 (3.28 x 15 L)

Country of Use: Japan MFG 1

Function: Lighted inshore buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 551 Lbs.

Buoy Draft: 5.84 Ft.

Overall Buoy Length: 15.09 Ft.

Focal Height of Light: 8.20 Ft.

Buoy Beam or Diameter: 3.28 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 45 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Aluminum  
Hull Filling :  
Tower : Aluminum  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Tail Tube

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: USM-1 batteries, 12V x 89.6Ah

Lighting Equipment: 100 - 175mm electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.433 In.  
Type: Steel Wire Rope

Sinker Size: 4,410 Lbs.

Topmark Type: Opt. Lateral or Spec

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.6 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

## Maintenance Notes:

Battery life:    107 days with 5W light or 53 days with 10W light.

## Special Features:

Fins on lower tail tube. Single point mooring attachment at top of tail tube.

## Stability Notes:

## General Notes

Manufacturers:                                Nippon Koki Kogyo Co

Source of Design:                             Nippon Koki Kogyo Co

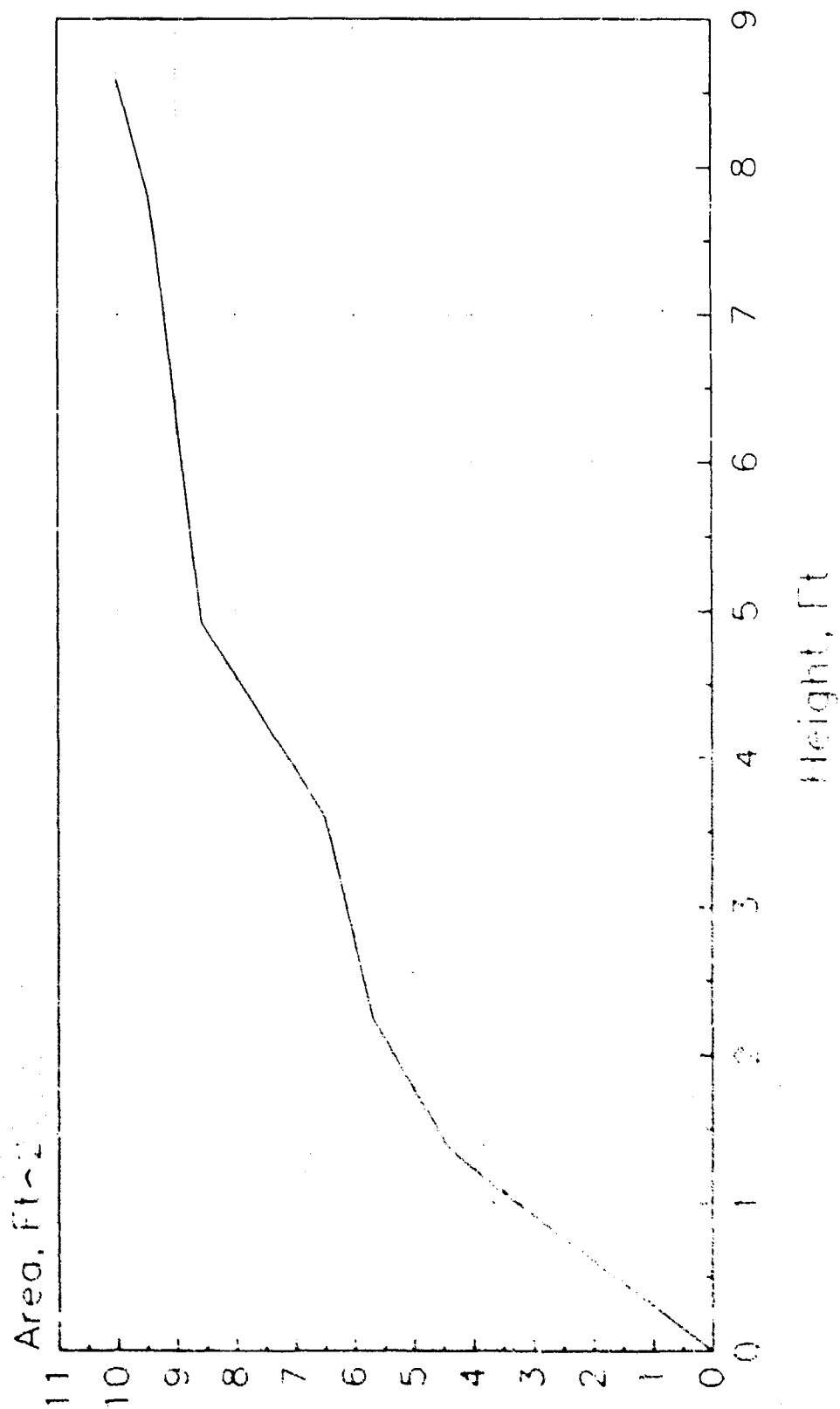
Drawing Reference:                           Japan MFG 1-1



NLB-1000 (3.28 x 15 L)

Cumulative Area

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## GENERAL INFORMATION

Name of Buoy: NLB-600 (1.97 x 10 L)

Country of Use: Japan MFG 1

Function: Lighted inshore buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 133 Lbs.

Buoy Draft: 3.75 Ft.

Overall Buoy Length: 10.26 Ft.

Focal Height of Light: 5.76 Ft.

Buoy Beam or Diameter: 1.97 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 16 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Aluminum  
Hull Filling :  
Tower : Aluminum  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Tail Tube

## RELATED EQUIPMENT

Number of Power Sources: 64

Type of Power Sources: USM-1 batteries, 12V x 44.8A

Lighting Equipment: 100 or 120mm electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.187 In.  
Type: Steel Wire Rope

Sinker Size: 1,325 Lbs.

Topmark Type: Opt. Lateral or Spec

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 4 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

## Maintenance Notes:

Battery life: 53 days with 5W light or 26 days with 10W light.

## Special Features:

Fins on lower tail tube. Single point mooring attachment at top of tail tube.

## Stability Notes:

## General Notes

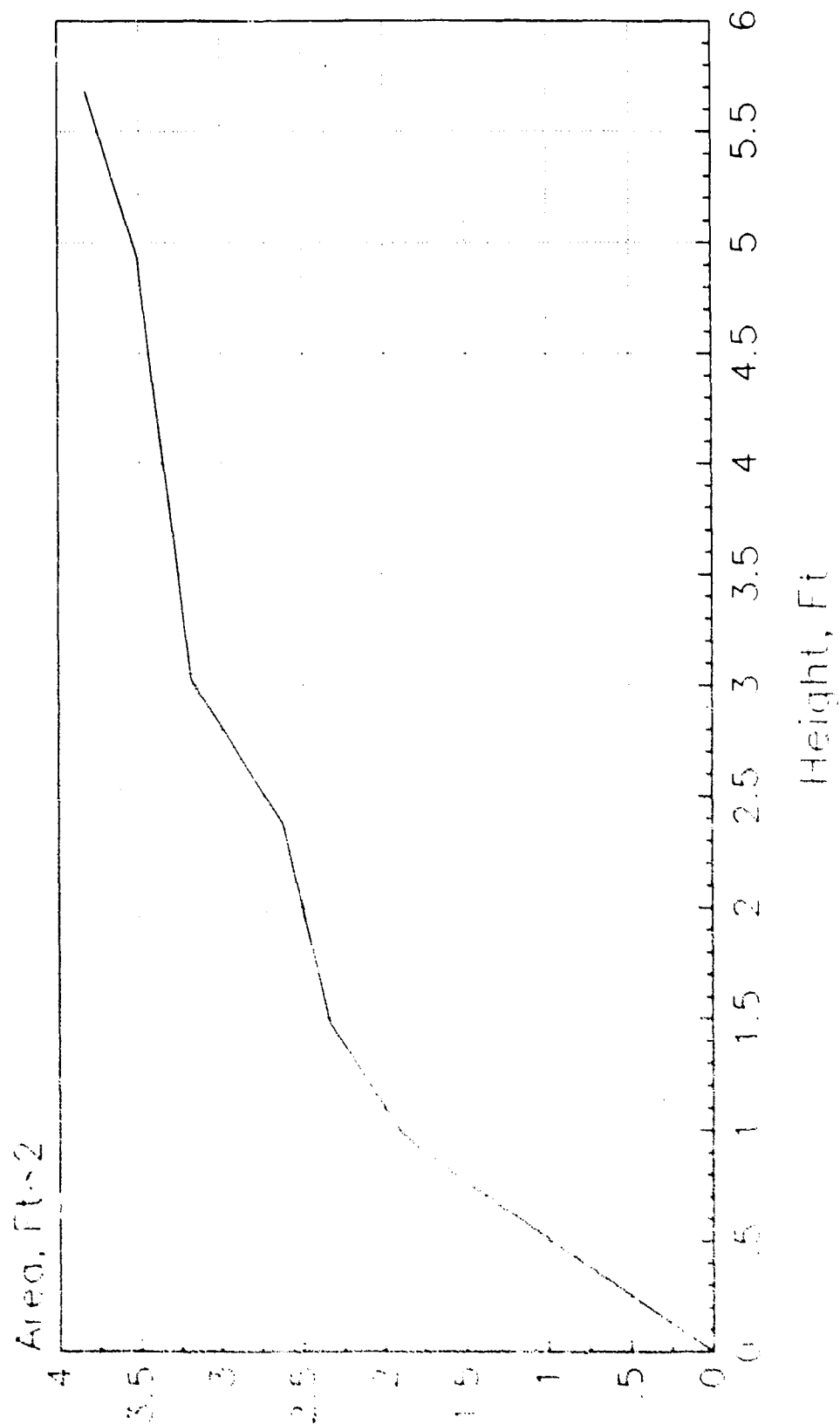
Manufacturers:                            Nippon Koki Kogyo Co

Source of Design:                        Nippon Koki Kogyo Co

Drawing Reference:                        Japan MFG 1-1

NLB-600 (3.75 x 10 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: NLB-800 (2.62 x 12 L)

Country of Use: Japan MFG 1

Function: Lighted inshore buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 265 Lbs.

Buoy Draft: 4.22 Ft.

Overall Buoy Length: 11.88 Ft.

Focal Height of Light: 6.69 Ft.

Buoy Beam or Diameter: 2.62 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 28 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Aluminum  
Hull Filling :  
Tower : Aluminum  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Tail Tube

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: USM-1 batteries, 12V x 89.6 Ah

Lighting Equipment: 100-150mm electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.315 In.  
Type: Steel Wire Rope

Sinker Size: 2,205 Lbs.

Topmark Type: Opt. Lateral or Spec

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.2 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

## Maintenance Notes:

Battery life: 107 days with 5W light or 53 days with 10W light.

## Special Features:

Fins on lower tail tube. Single point mooring attachment at top of tail tube.

## Stability Notes:

## General Notes

Manufacturers:                            Nippon Koki Kogyo Co

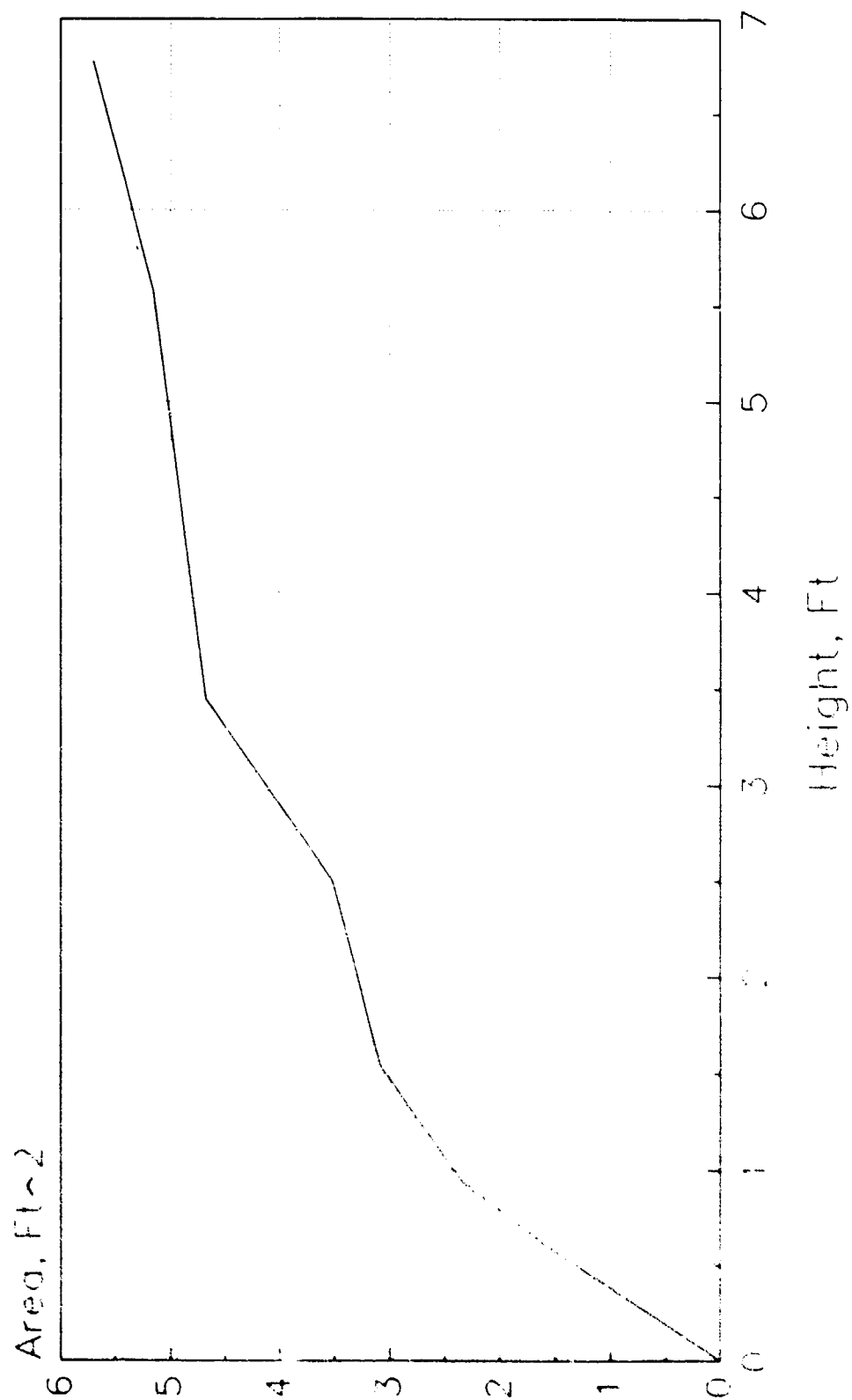
Source of Design:                        Nippon Koki Kogyo Co

Drawing Reference:                        Japan MFG 1-1



NLB-800 (4.22 x 12 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: AB-200 (3.0 x 15 L)

Country of Use: Japan MFG 2

Function: Lighted inshore buoy, for swift current.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 508 Lbs.

Buoy Draft: 7.62 Ft.

Overall Buoy Length: 14.73 Ft.

Focal Height of Light: 6.79 Ft.

Buoy Beam or Diameter: 2.95 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 37 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polyurethane Foam  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Foam Filled

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: Packed dry cell batts.12v400Ah  
Lighting Equipment: 70mm electric lantern  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.625 In.  
Type: Steel Chain  
Sinkers Size: 2,205 Lbs.  
Topmark Type: none  
Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: PF  
Nominal Visual Range of Daymark: 1.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 5.0 Kts.  
Mooring Depth: Minimum: 8 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Has tail tube with current stabilizing fins.

Stability Notes:

General Notes

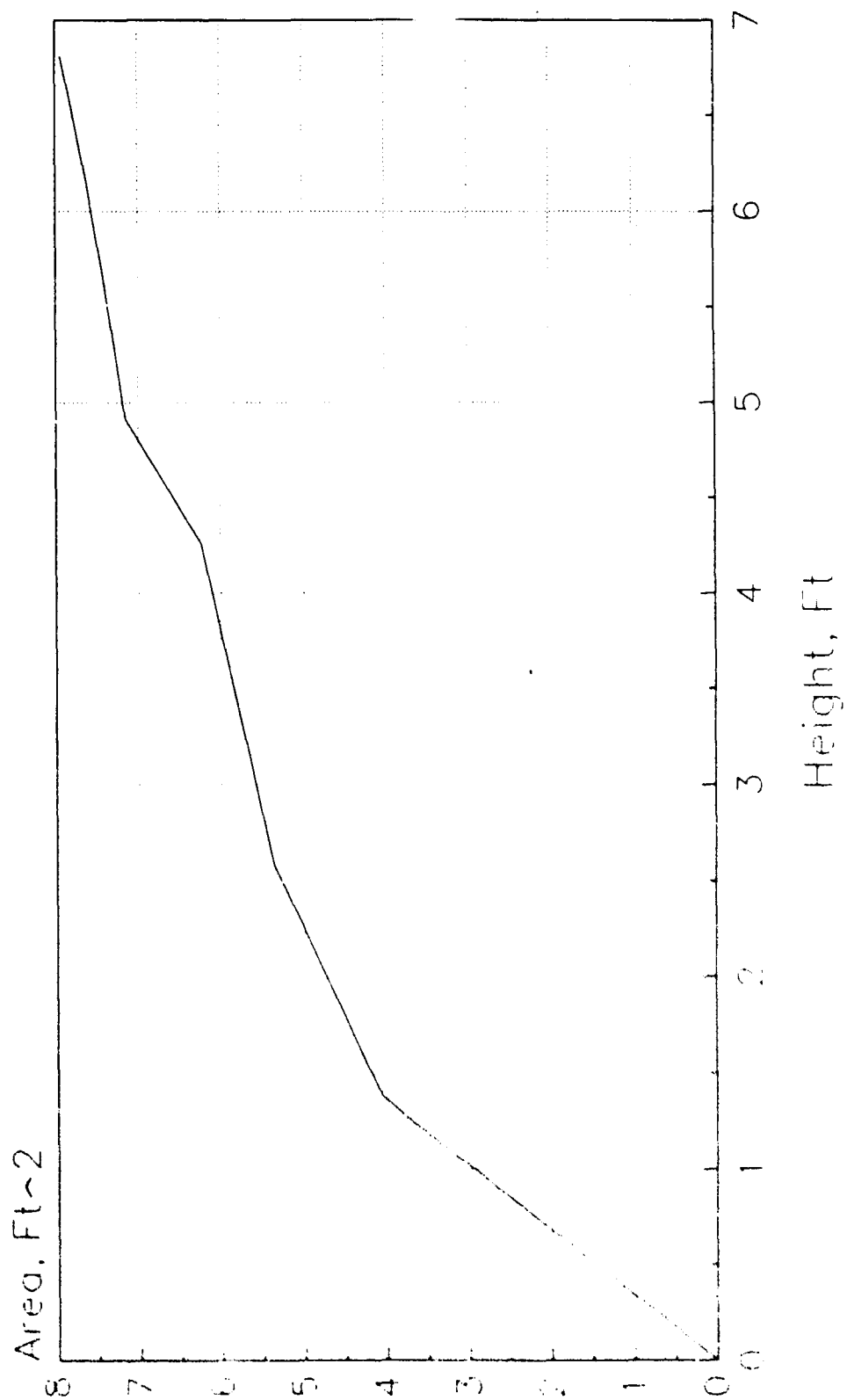
Manufacturers: Ryokuseisha Corp.

Source of Design: Ryokuseisha Corp.

Drawing Reference: Japan MFG 2-11

AB-200 (3.0 x 15 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: CB-100 (1.6 x 5.9 L)

Country of Use: Japan MFG 2

Function: Lighted inshore buoy for shallow water.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 57 Lbs.

Buoy Draft: 2.24 Ft.

Overall Buoy Length: 5.90 Ft.

Focal Height of Light: 3.35 Ft.

Buoy Beam or Diameter: 1.64 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 11 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : ABS Plastic  
Hull Filling :  
Tower : Aluminum Alloy  
Topmark :  
Counterweight: Battery

Coating/Coloring System:

Subdivision:

Hull Type: Shallow cylinder

Counterweight Type: Internal tail tube

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Packed dry cell batt. 12v200Ah

Lighting Equipment: 70mm electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Synthetic rope

Sinker Size: 220 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.3 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 3 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        5 Mos.

## Maintenance Notes:

Maintenance interval based on 170 day battery life.

## Special Features:

## Stability Notes:

## General Notes

Manufacturers:                                Ryokuseisha Corp.

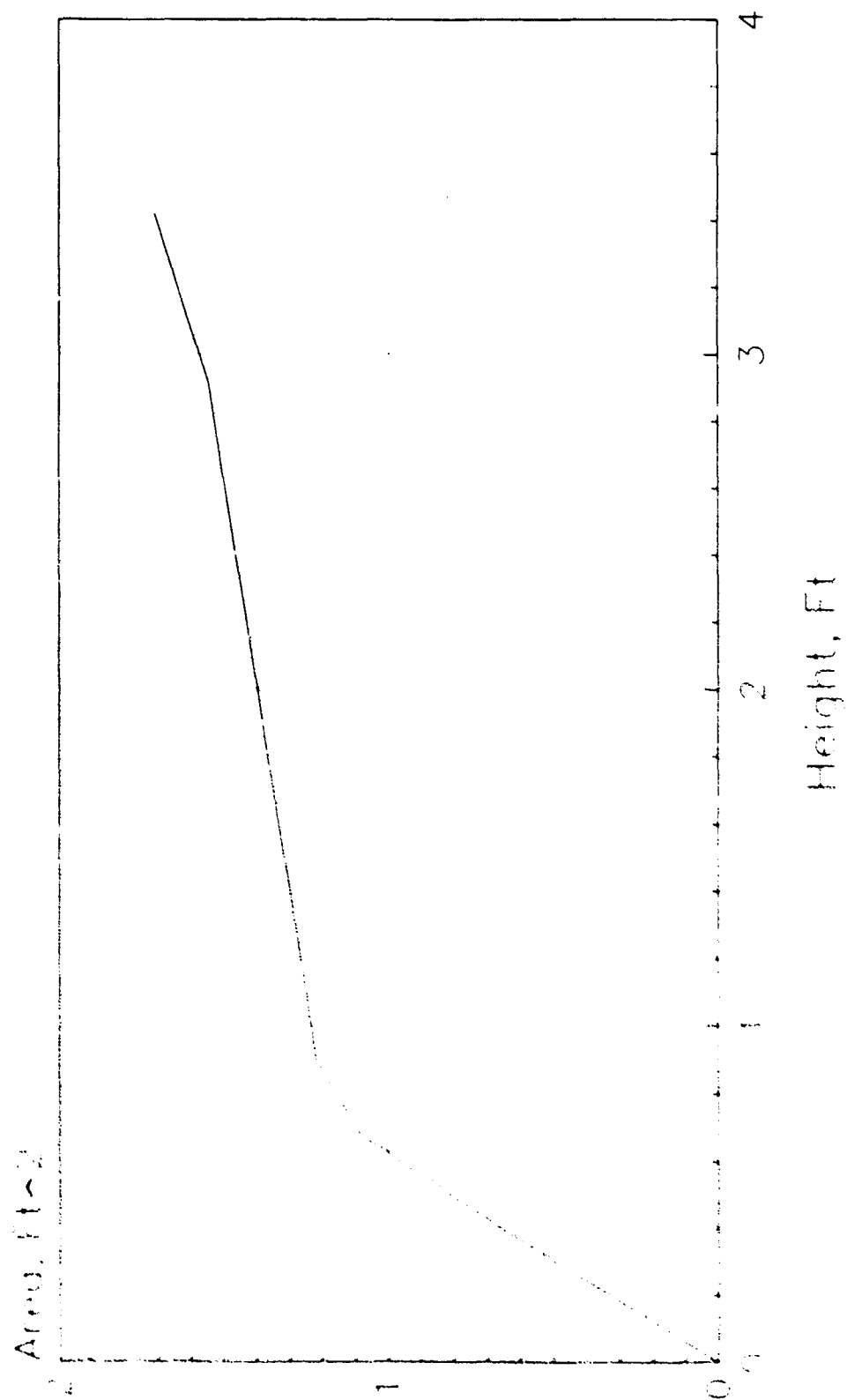
Source of Design:                             Ryokuseisha Corp.

Drawing Reference:                           Japan MFG 2-14



CB-100 (1.6 x 5.9 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: CB-200 (1.6 x 9.3 L)

Country of Use: Japan MFG 2

Function: Lighted inshore buoy, for shallow water.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 97 Lbs.

Buoy Draft: 2.41 Ft.

Overall Buoy Length: 9.29 Ft.

Focal Height of Light: 6.56 Ft.

Buoy Beam or Diameter: 1.64 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 11 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : ABS Plastic  
Hull Filling :  
Tower : Aluminum Alloy  
Topmark :  
Counterweight: Battery

Coating/Coloring System:

Subdivision:

Hull Type: Shallow cylinder

Counterweight Type: Internal tail tube

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Packed dry cell batt. 12v200Ah

Lighting Equipment: 70mm electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Synthetic Rope

Sinker Size: 220 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.5 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 3 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        5 Mos.

## Maintenance Notes:

Maintenance interval based on 170 day battery life.

## Special Features:

## Stability Notes:

## General Notes

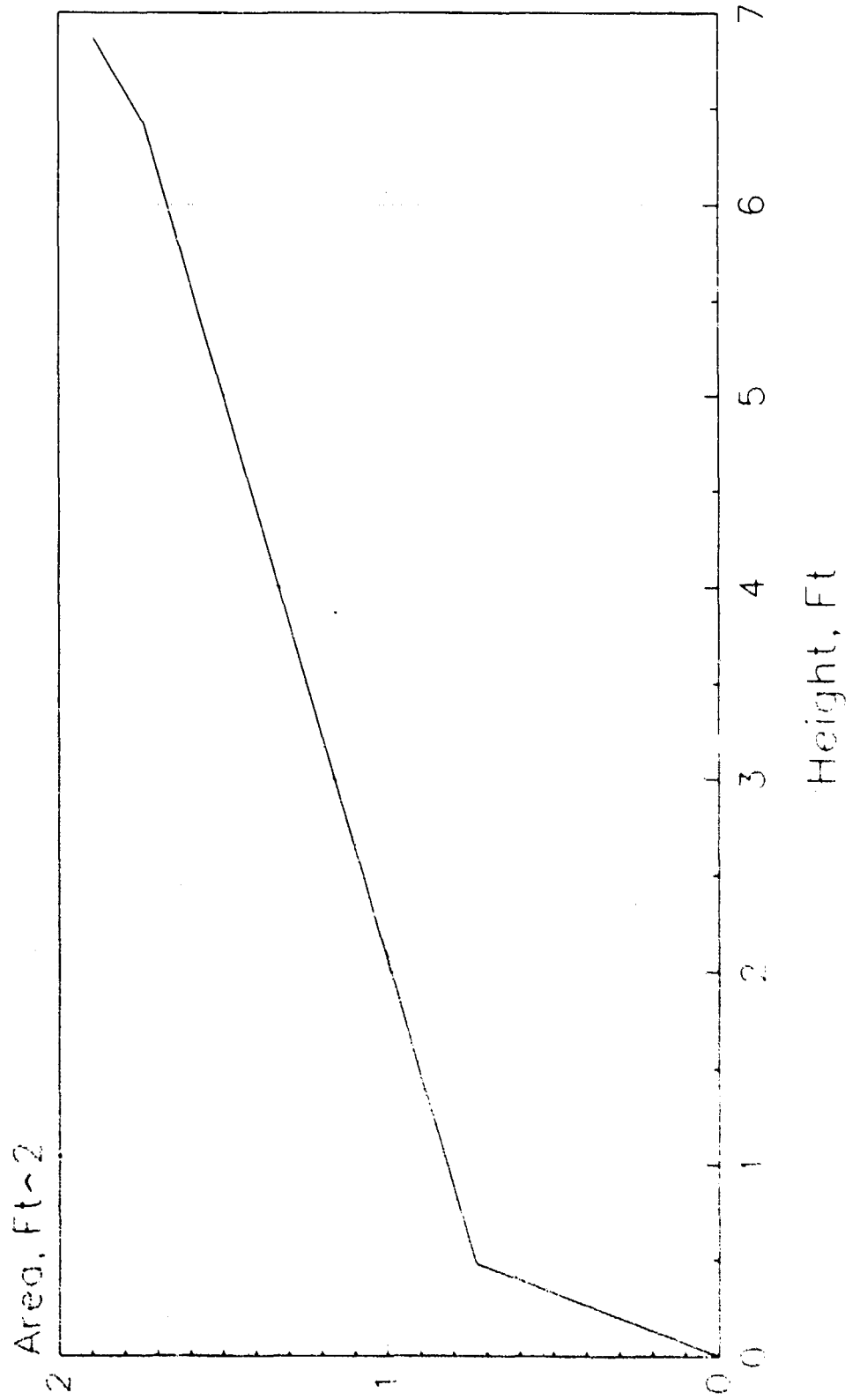
Manufacturers:                                Ryokuseisha Corp.

Source of Design:                             Ryokuseisha Corp.

Drawing Reference:                            Japan MFG 2-13

CB-200 (1.6 x 9.3 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: H-290 (4.9 x 19 LR)

Country of Use: Japan MFG 2

Function: Lighted semi-protected buoy for swift current.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,426 Lbs.

Buoy Draft: 8.40 Ft.

Overall Buoy Length: 19.26 Ft.

Focal Height of Light: 10.26 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 102 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 3

Type of Power Sources: Primary bat.12v1050Ah or Solar

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.000 In.  
Length : 9.8 Ft.

Mooring Line: Size: 1.000 In.  
Type: Steel Chain

Sinker Size: 8,820 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SF

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 3.2 Nmi.

Maximum Current: 5.0 Kts.

Mooring Depth: Minimum: 11 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

## Special Features:

Has tail tube with current stabilizer fins.

Stability Notes:

General Notes

Manufacturers: Ryokuseisha Corp.

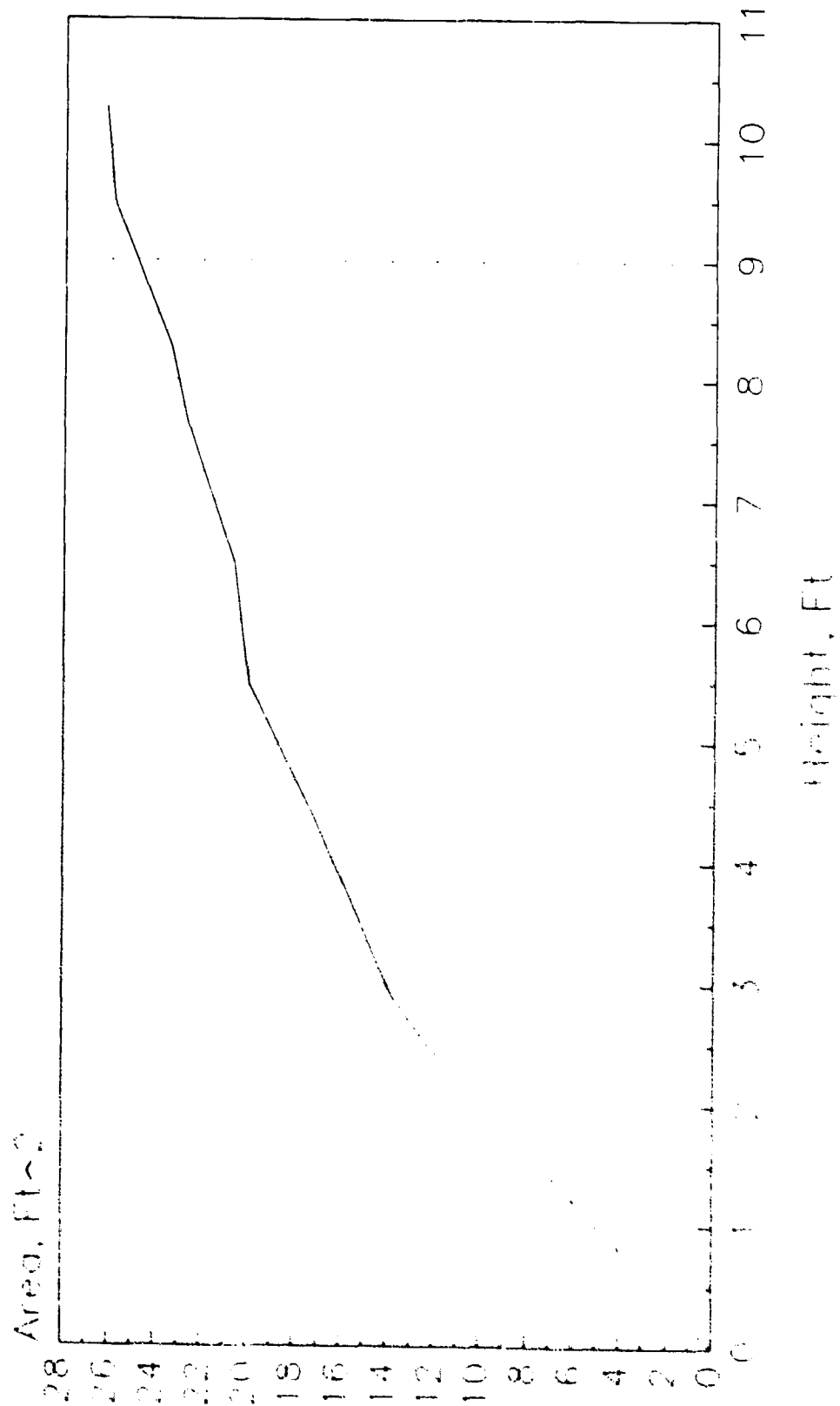
Source of Design: Ryokuseisha Corp.

Drawing Reference: Japan MFG 2-8



H-290 (4.9 x 19 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: M-250C (3.9 x 18 L)

Country of Use: Japan MFG 2

Function: Lighted semi-protected buoy, for swift current.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,173 Lbs.

Buoy Draft: 7.86 Ft.

Overall Buoy Length: 17.55 Ft.

Focal Height of Light: 9.38 Ft.

Buoy Beam or Diameter: 3.94 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 65 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 9

Type of Power Sources: Primary batt.12v900Ah or Solar

Lighting Equipment: 70mm electric lantern

Sound Equipment: none

Other Payload: Optional radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.625 In.  
Length : 8.2 Ft.

Mooring Line: Size: 0.625 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SF

Nominal Visual Range of Daymark: 1.9 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 5.0 Kts.

Mooring Depth: Minimum: 10 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

## Special Features:

Has tail tube with current stabilizer fins.

Stability Notes:

General Notes

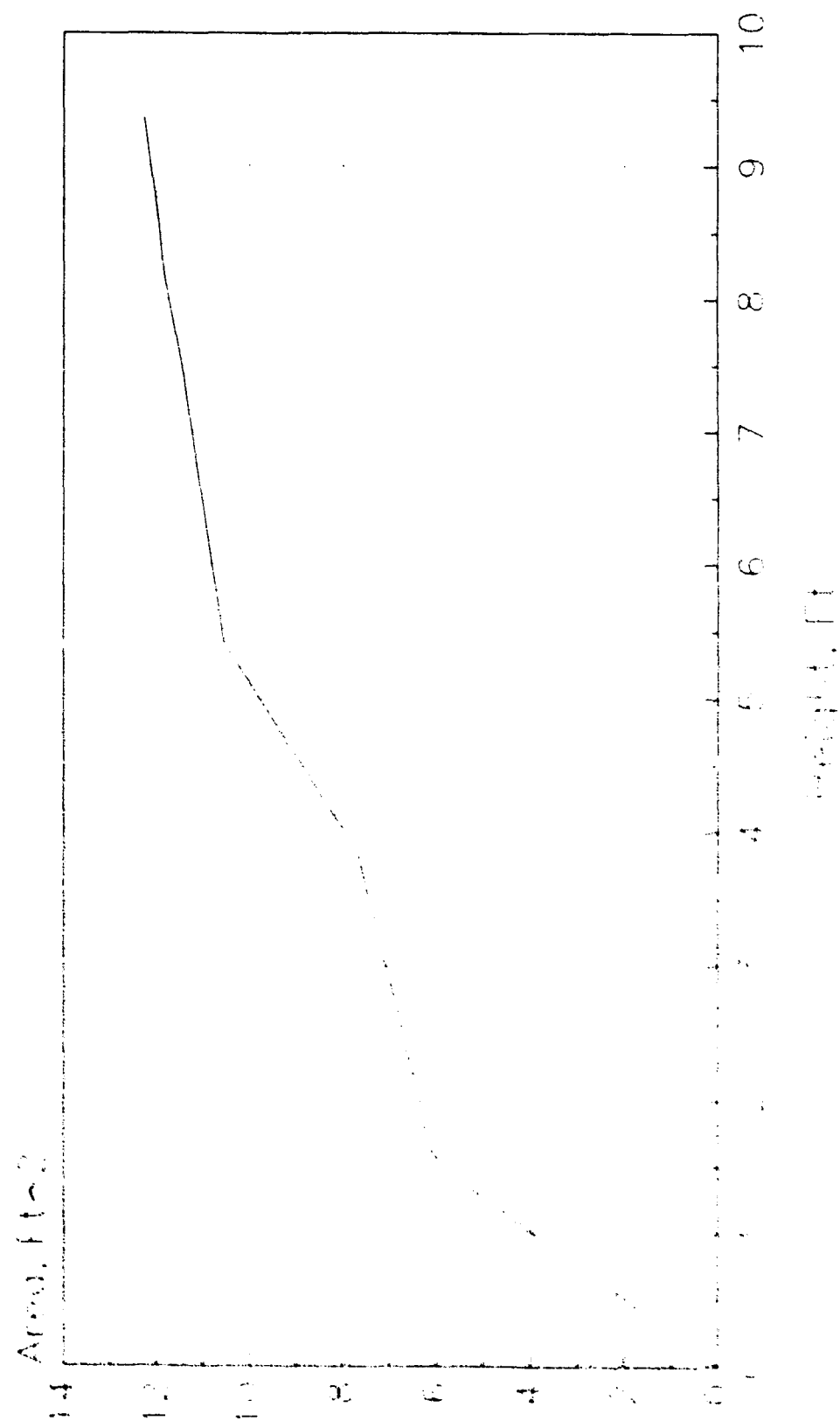
Manufacturers:                                Ryokuseisha Corp.

Source of Design:                             Ryokuseisha Corp.

Drawing Reference:                            Japan MFG 2-9

M-250C (3.9 x 18 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: M-350T (6.4 x 25 LR)  
Country of Use: Japan MFG 2  
Function: Lighted semi-protected buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 4,525 Lbs.  
Buoy Draft: 12.00 Ft.  
Overall Buoy Length: 25.13 Ft.  
Focal Height of Light: 12.50 Ft.  
Buoy Beam or Diameter: 6.40 Ft.  
Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.  
Pounds Per Inch Immersion: 172 Lbs.  
Metacentric Height: 0.00 Ft.  
Reserve Buoyancy: 0 Lbs.  
Wave Motion Response: Wave following  
Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron  
Coating/Coloring System:  
Subdivision:  
Hull Type: Cylindrical  
Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 6

Type of Power Sources: Primary bat. 12v100Ah or Solar

Lighting Equipment: 150mm electric lantern

Sound Equipment: none

Other Payload: Optional radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 1.250 In.  
Length : 16.4 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 11,030 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.3 Nmi.

Radar Range: 3.3 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 20 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers: Ryokuseisha Corp

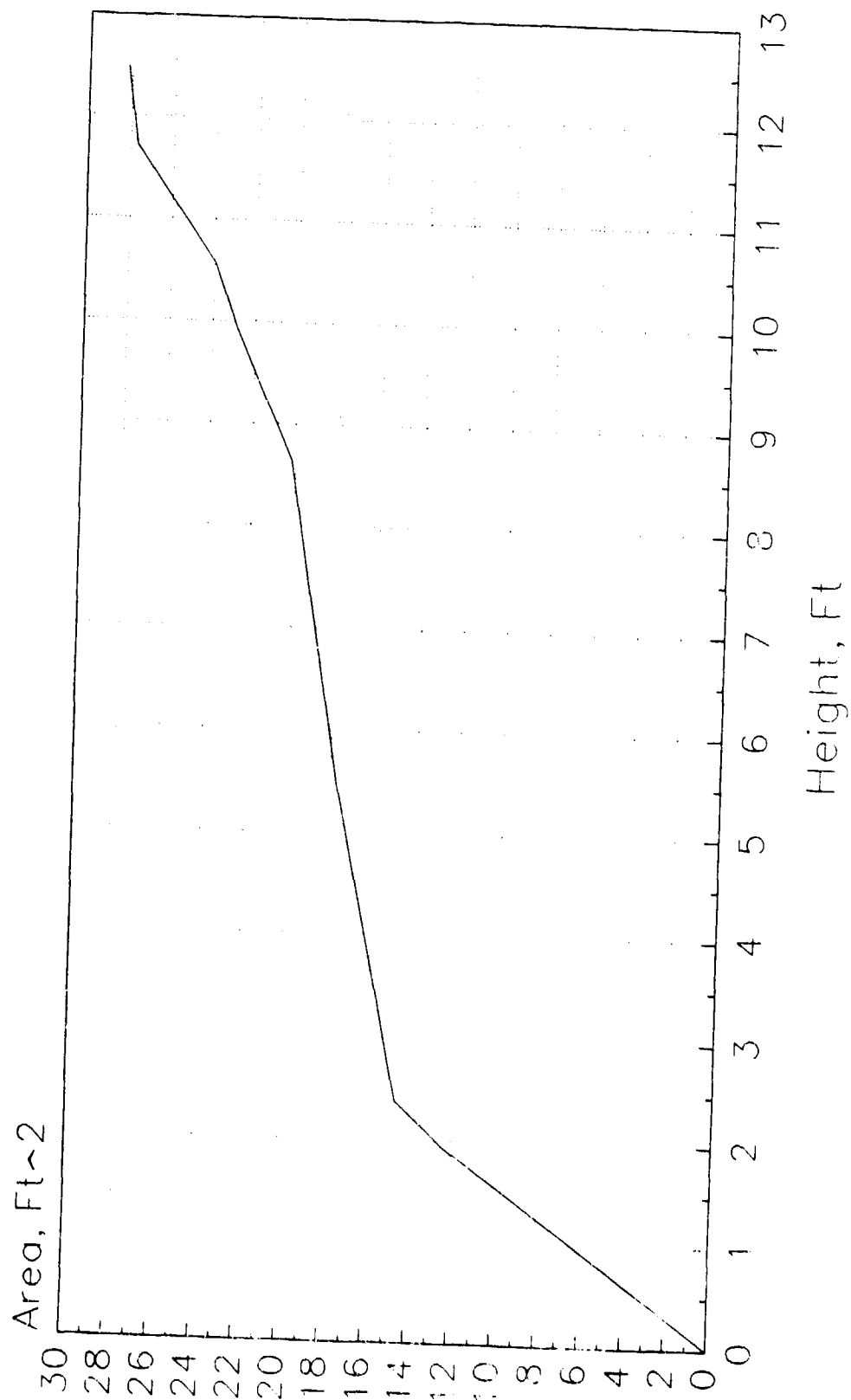
Source of Design: Ryokeseisha Corp

Drawing Reference: Japan MFG 2-7



M-350T (6.4 x 25 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: MLTV-10RA (5.9 x 57 LS)

Country of Use: Japan MFG 2

Function: Lighted articulated spar for narrow  
channels and precise position.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 39.37 Ft.

Overall Buoy Length: 57.41 Ft.

Focal Height of Light: 17.73 Ft.

Buoy Beam or Diameter: 5.91 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled (Fixed)

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Articulated Spar

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Solar sys or Primary batteries

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Universal joint

Sinker Size: 24,260 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 31 Ft.  
Maximum: 40 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

Length and draft depend on water depth.

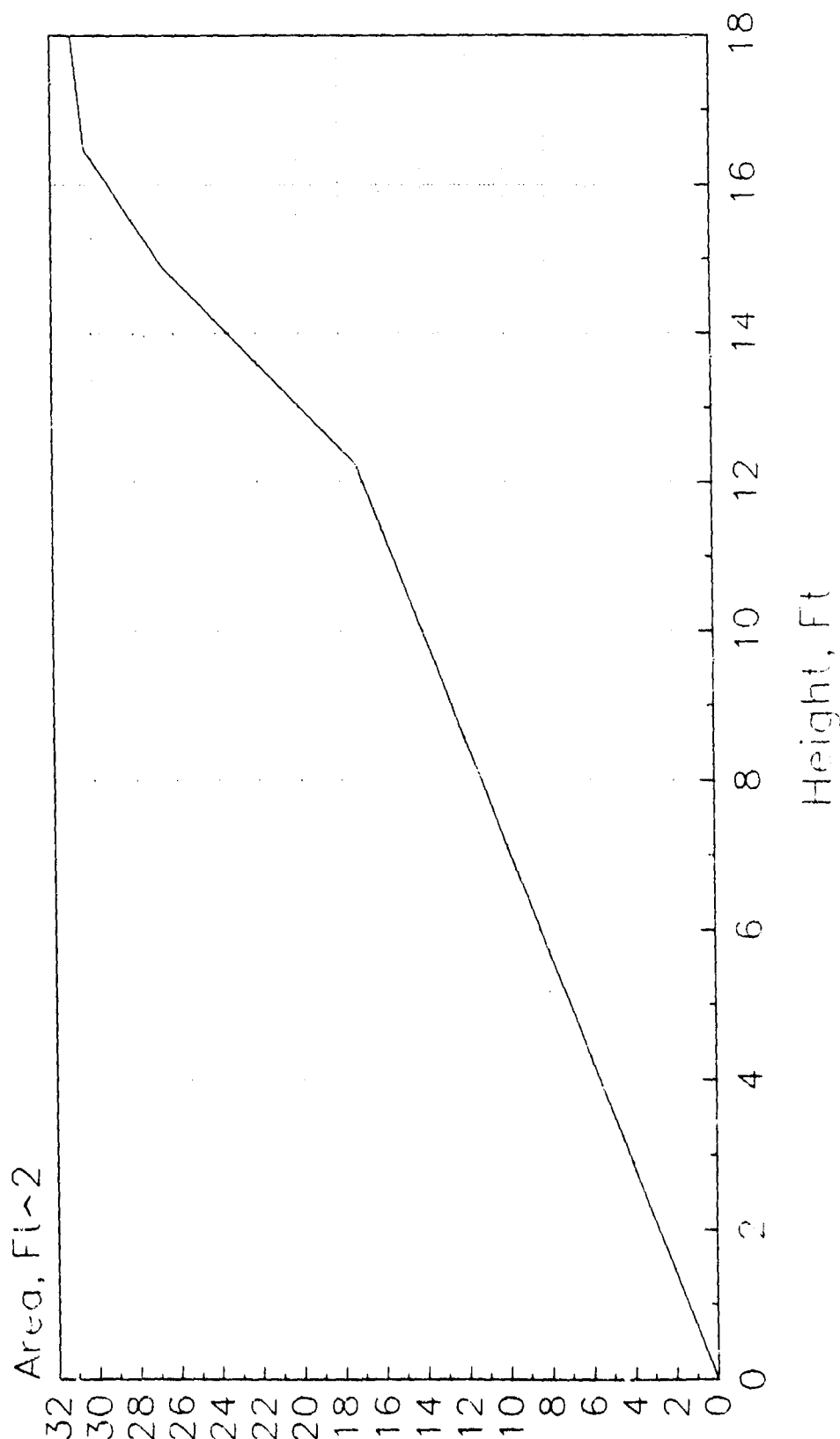
Manufacturers:                            Ryokuseisha Corp.

Source of Design:                           Ryokuseisha Corp.

Drawing Reference:                        Japan MFG 2-15

MLTV-10RA (5.9 x 57 LS)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: MLTV-11S (6.6 x 56 LS)

Country of Use: Japan MFG 2

Function: Lighted articulated spar for narrow  
channels and precise position.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 36.00 Ft.

Overall Buoy Length: 55.77 Ft.

Focal Height of Light: 19.37 Ft.

Buoy Beam or Diameter: 6.56 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled (fixed)

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Articulated spar

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Solar sys or Primary batteries

Lighting Equipment: 133mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Universal joint

Sinker Size: 11,025 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 2.0 Kts.

Mooring Depth: Minimum: 25 Ft.  
Maximum: 36 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes  
    Lenth and draft depend water depth.

Manufacturers:                            Ryokuseisha Corp.

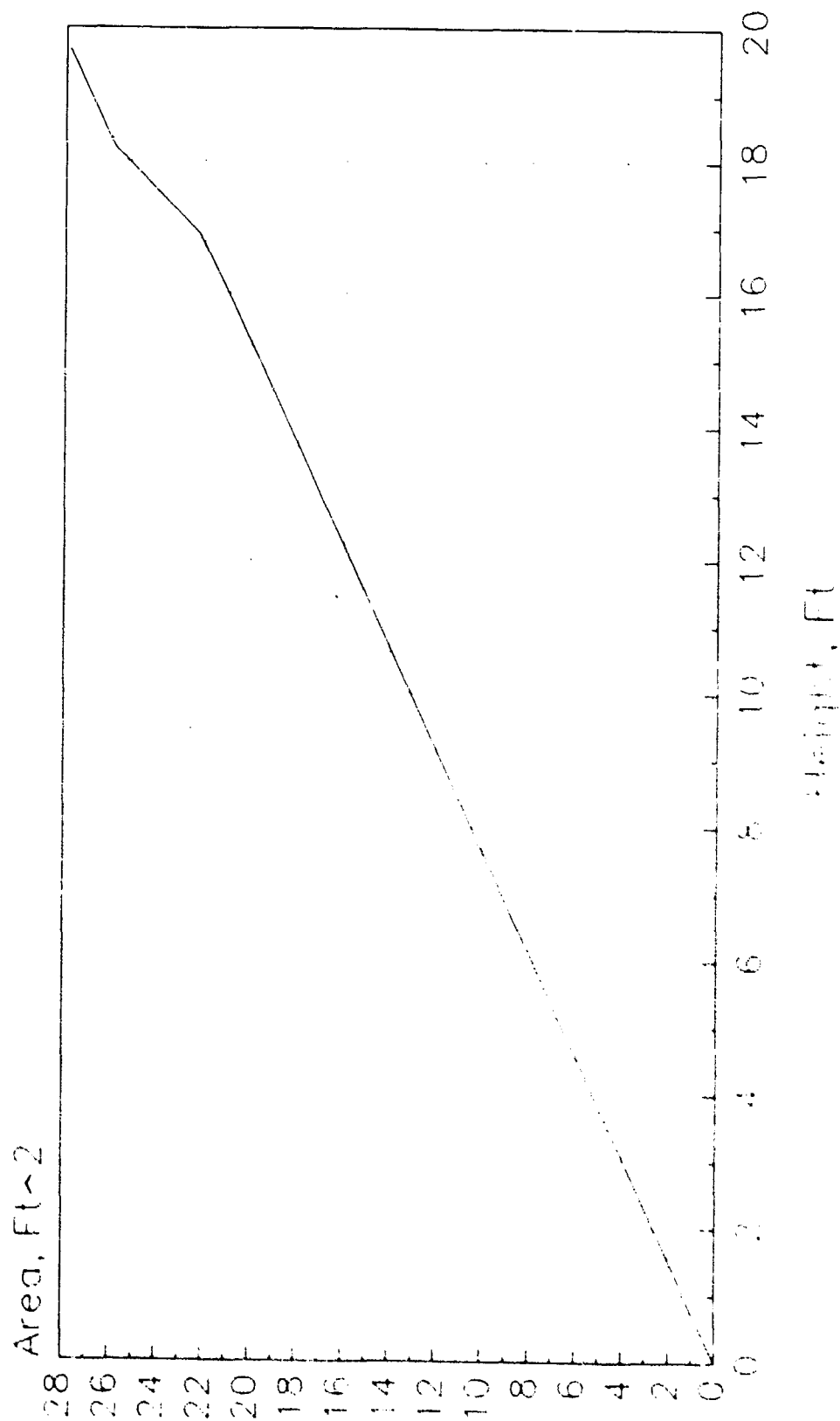
Source of Design:                            Ryokuseisha Corp.

Drawing Reference:                            Japan MFG 2-15



MLTV-11S (6.6 x 56 LS)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: MLTV-15RA (7.6 x 72 LS)

Country of Use: Japan MFG 2

Function: Lighted articulated spar for narrow  
channels and precise position.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 49.21 Ft.

Overall Buoy Length: 72.18 Ft.

Focal Height of Light: 22.35 Ft.

Buoy Beam or Diameter: 7.55 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled (fixed)

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Articulated Spar

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: Solar sys.or primary batteries

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: universal joint

Sinker Size: 22,050 Lbs.

Topmark Type: Opt. Cardinal or Lat

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 4.0 Kts.

Mooring Depth: Minimum: 39 Ft.  
Maximum: 49 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

Length and draft depend on water depth.

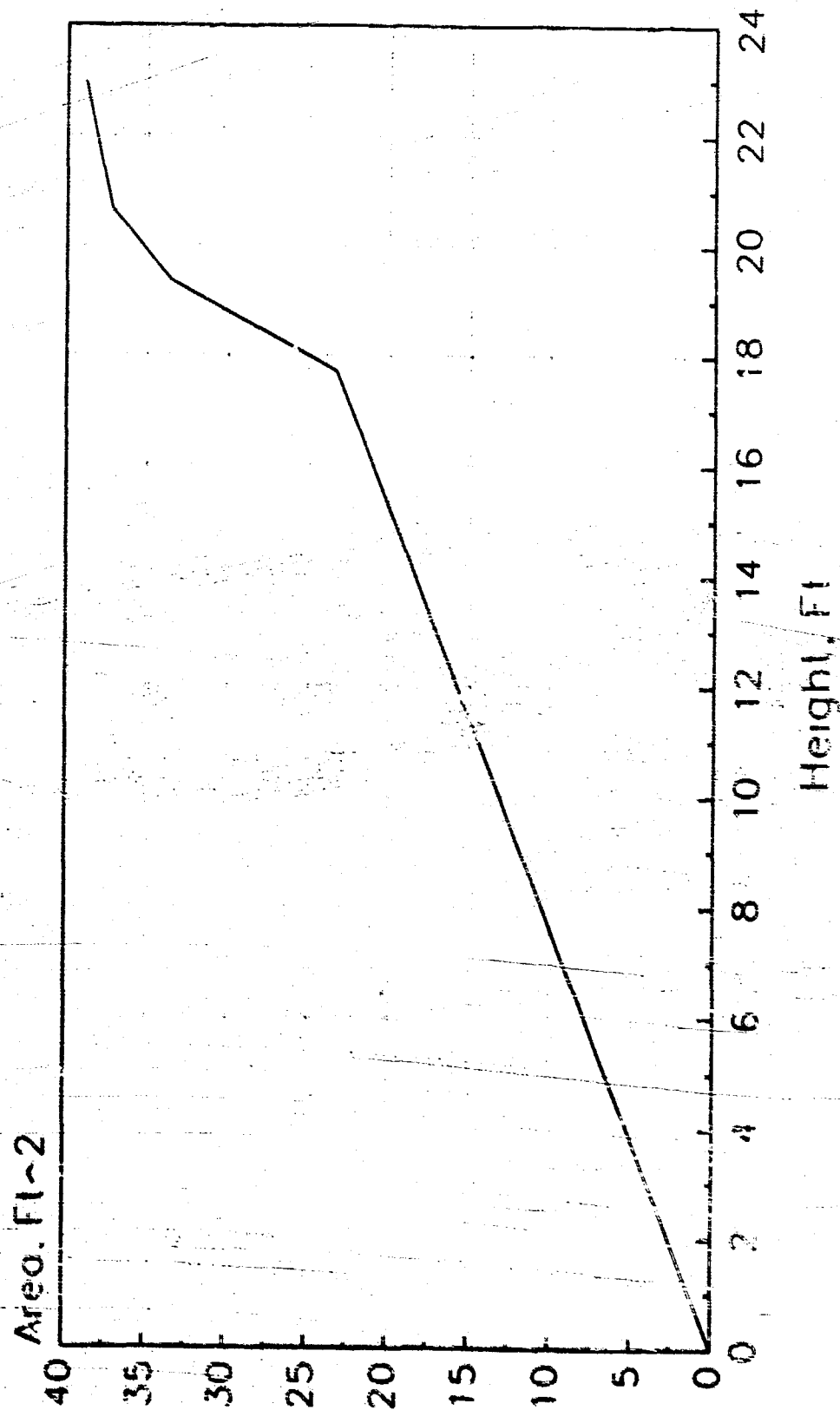
Manufacturers:                            Ryokuseisha Corp.

Source of Design:                        Ryokuseisha Corp.

Drawing Reference:                        Japan MFG 2-15

# MLTV-15RA (7.6 x 72 LS)

Cumulative Area



ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

The buoy weight shown on page 1 includes battery.

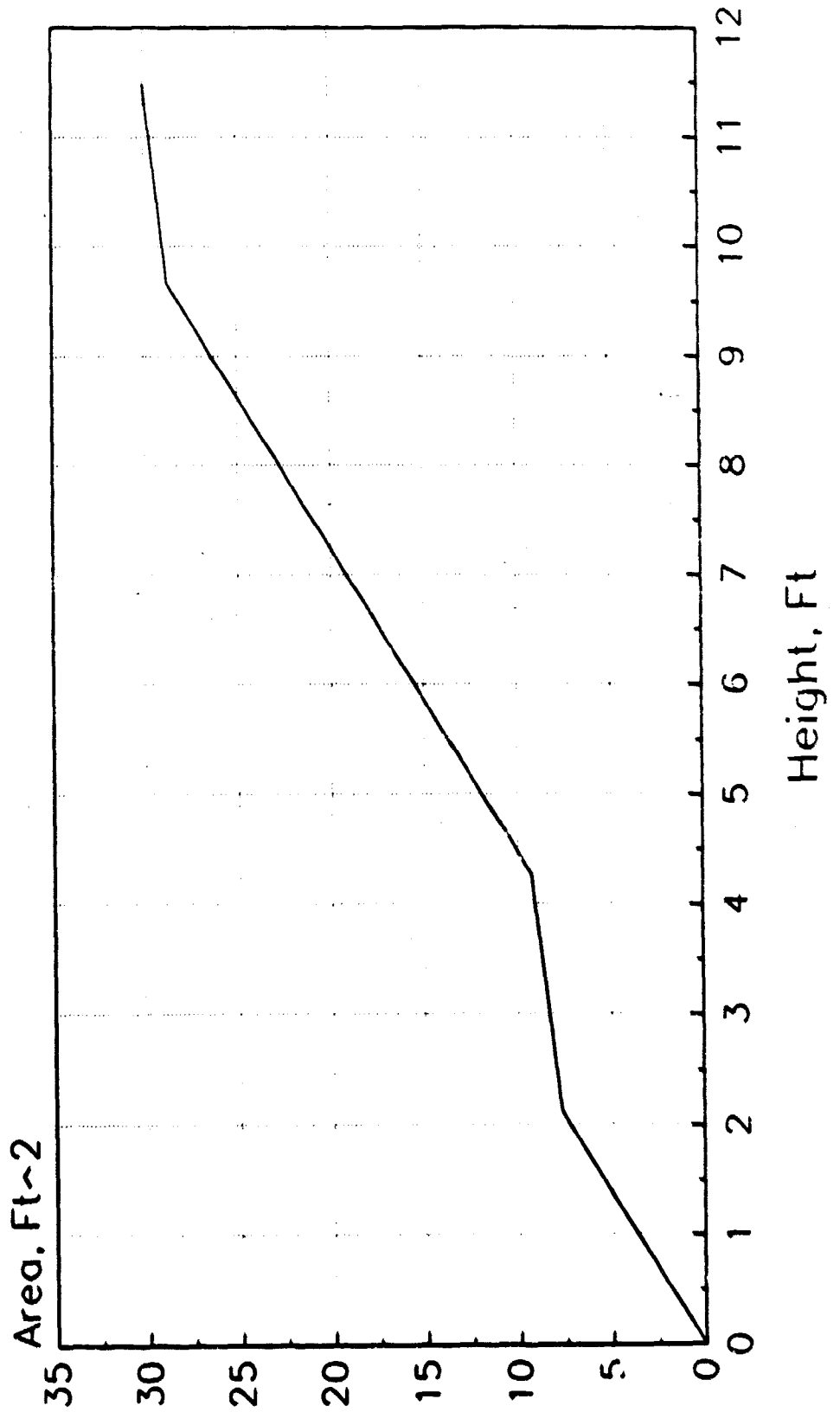
Manufacturers:

Source of Design:                        Adm of Navig & Hydro

Drawing Reference:                        Denmark 14

# Type 25, Cylindrical Top

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Type 26, Conical Top, Lighted

Country of Use: Denmark

Function: This is a lighted buoy used for marking  
the waterways.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,974 Lbs.

Buoy Draft: 8.86 Ft.

Overall Buoy Length: 20.34 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 1.15 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Plastic  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: Four Compartment

Hull Type: Cylindrical

Counterweight Type: Rings at Bottom



RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload: Aluminum Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinker Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM & SM  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 5.7 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Fifth (50) of these buoys were built using hulls of Type 22 buoy.

Special Features:

50 of this type uses type 22 hulls.

This type buoy has an aluminum radar reflector and a plastic superstructure (integral).

Stability Notes:

General Notes

The buoy weight shown on page 1 includes battery.

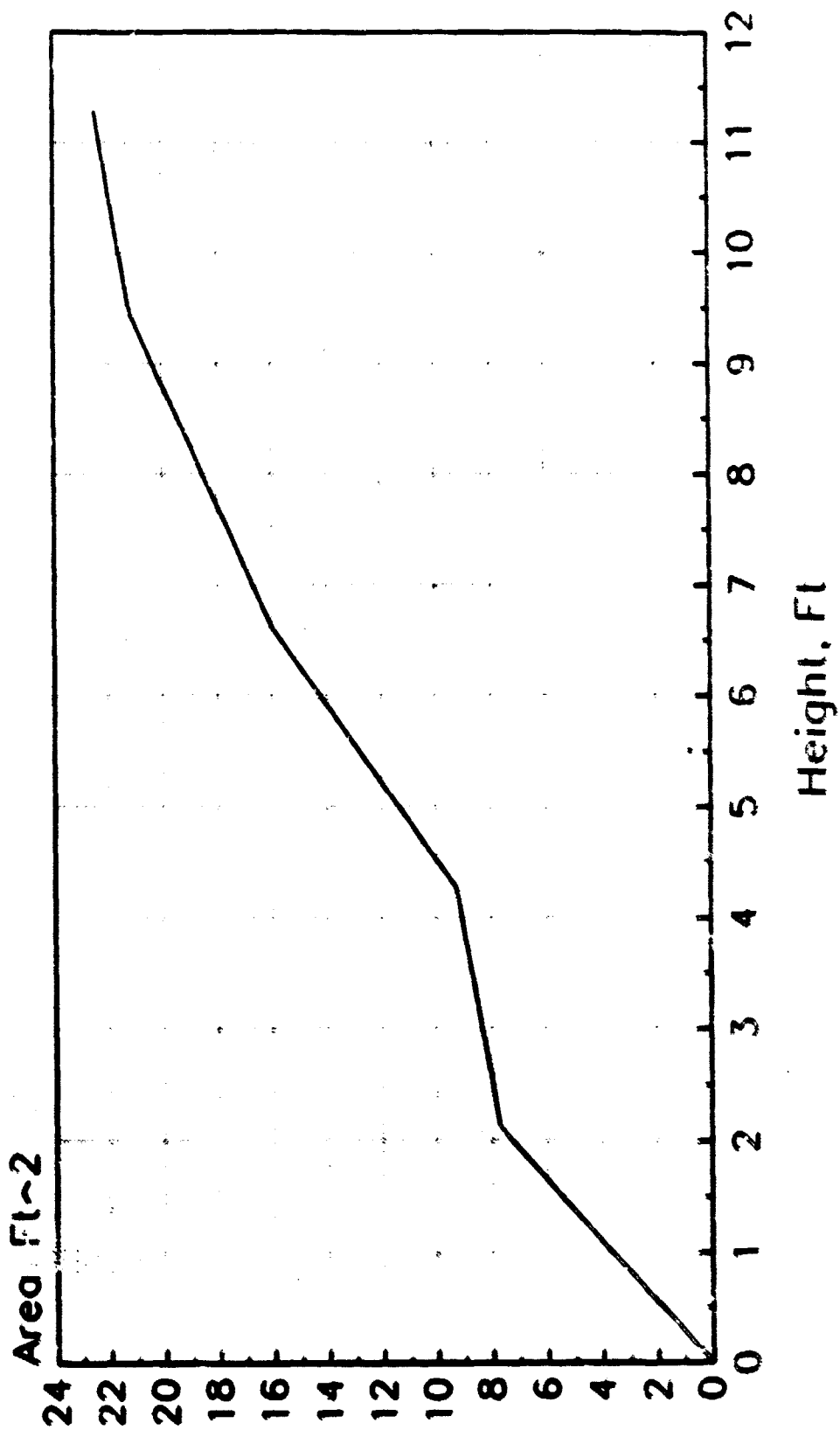
Manufacturers:

Source of Design:                    Adm of Navig & Hydro

Drawing Reference:                    Denmark 5

# Type 26, Conical, Lighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Type 31, Cylind. Top, Lighted

Country of Use: Denmark

Function: This is a lighted buoy used to mark the waterways.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,870 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 20.51 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: 2 Compartment

Hull Type: Cylindrical

Counterweight Type: Intrnl @ Cone Bottom

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM & SM  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

The buoy weight shown on page 1 includes battery.

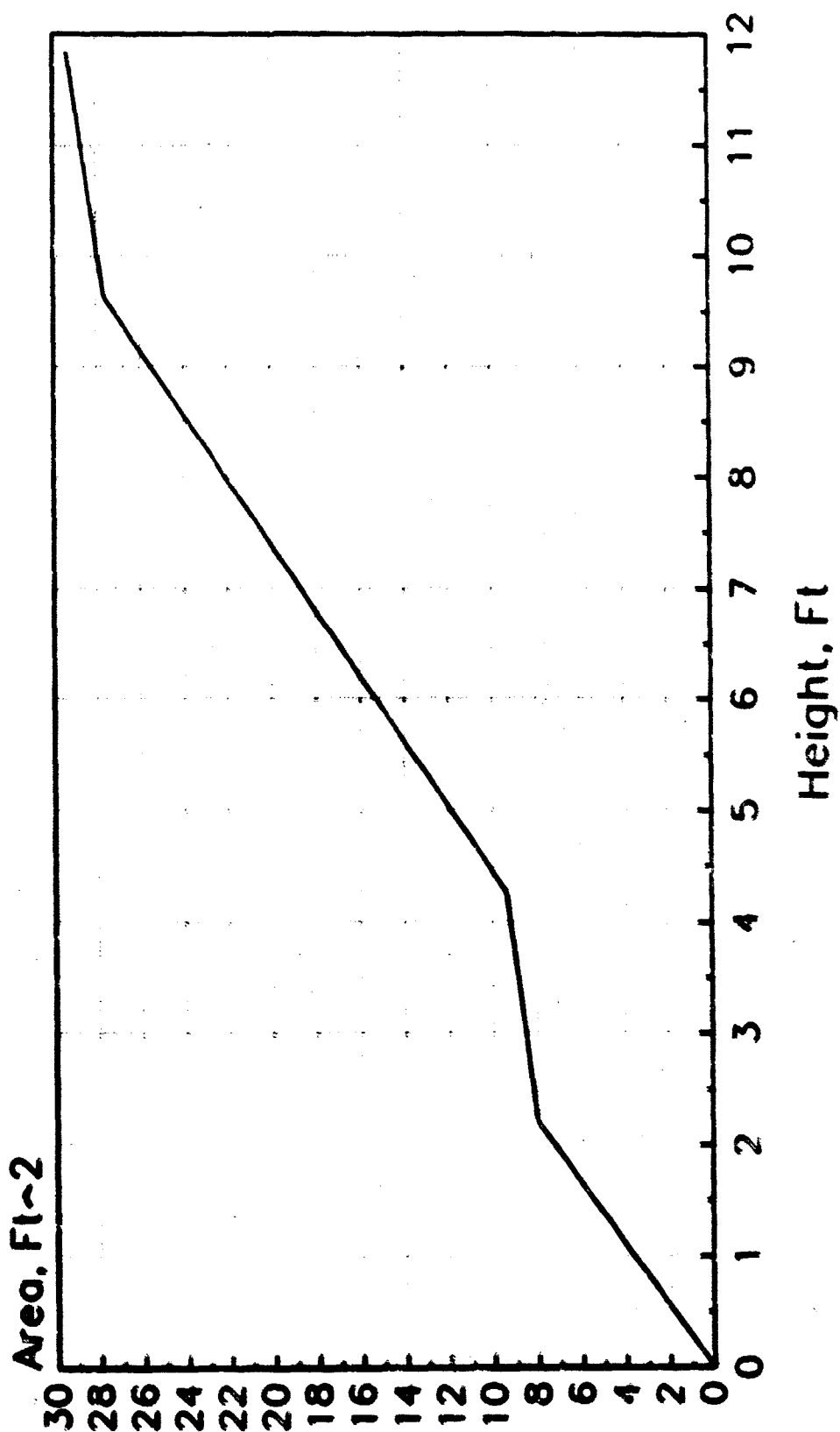
Manufacturers:

Source of Design:                Adm of Navig & Hydro

Drawing Reference:               Denmark 13

# Type 31, Cylind. Top, Lighted

Cumulative Area \_\_\_\_\_



RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinker Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM & SM  
Nominal Visual Range of Daymark: 2.1 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Buoy hull interchangeable with Type 31 cylindrical (CAN) top buoy.

Special Features:

Stability Notes:

General Notes

Total weight shown on page 1 includes the weight of batteries.

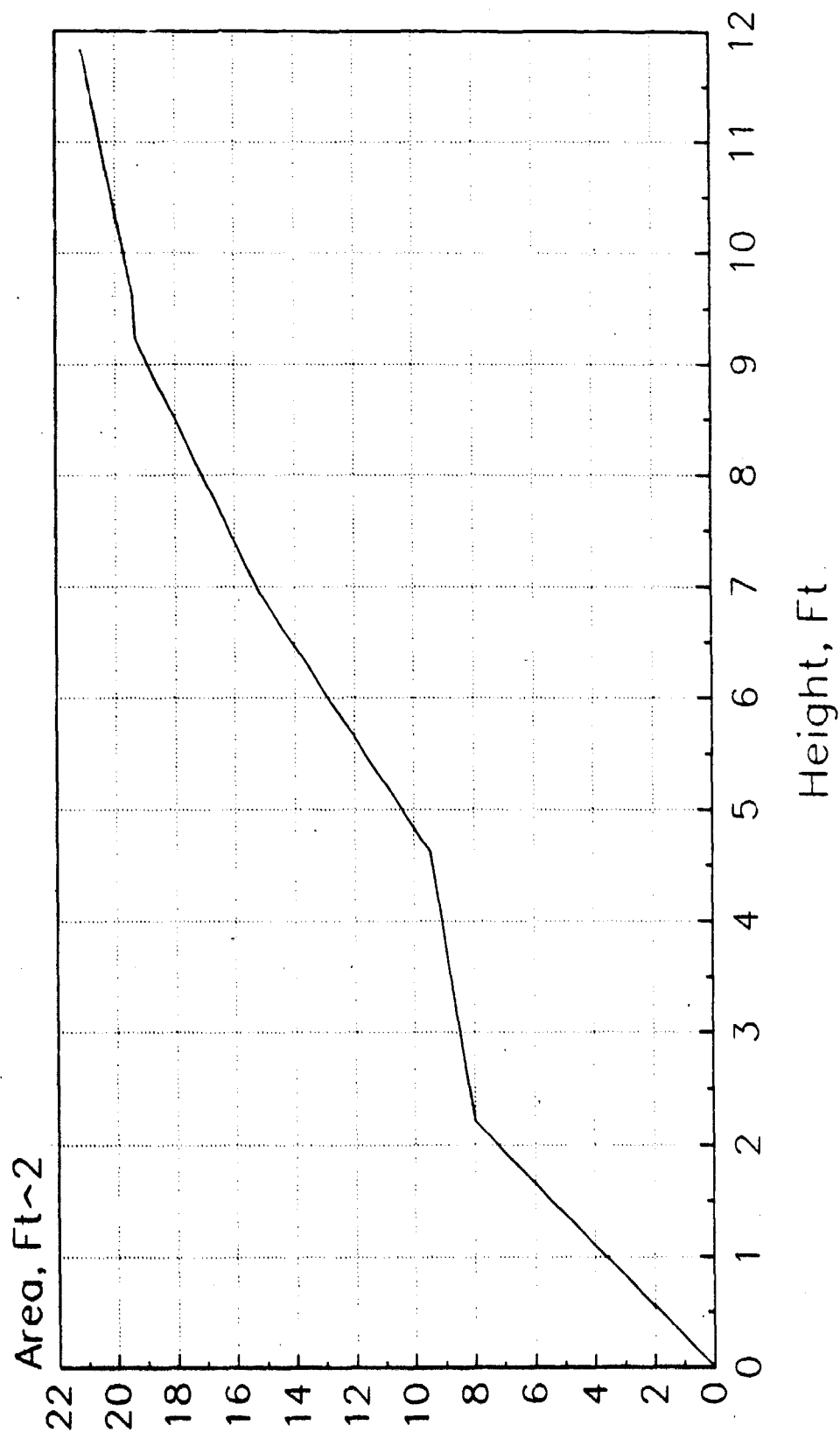
Manufacturers:

Source of Design:                Adm of Navig & Hydro

Drawing Reference:               Denmark 4

# Type 32, Conical Top, Lighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Type 43 Ocean Conical, Lighted

Country of Use: Denmark

Function: The largest buoy is Type 43. There are only 9 of this type. They replace the lightships of which there were 12, but none are left as of 1990.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 17,660 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 34.61 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 9.43 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: One Compartment

Hull Type: Cylindrical

Counterweight Type: External Tube

RELATED EQUIPMENT

Number of Power Sources: 2  
Type of Power Sources: Electric Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload: Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                        0.0 Yrs.

Maintenance Interval:                0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

The buoy weight on page 1 includes battery.

Manufacturers:

Source of Design:                    Adm of Navig & Hydro

Drawing Reference:                   Denmark 6

## GENERAL INFORMATION

Name of Buoy: Type 52 Ocean Conical, Lighted

Country of Use: Denmark

Function: This type is used mostly for RACON applications. There are approximately 20 of these buoys.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 32.81 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 6.56 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Steel & Concrete

Coating/Coloring System:

Subdivision: One Compartment

Hull Type: Cylindrical

Counterweight Type: Extrnl Tube & Intrnl

#### RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload: Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinker Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 1

#### OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design: Adm of Navig & Hydro

Drawing Reference: Denmark 7



## GENERAL INFORMATION

Name of Buoy: Type 62 Conical, Lighted

Country of Use: Denmark

Function: This is a lighted buoy. Maybe used  
inland and/or between islands at shallow  
water locations.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,866 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 8.92 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type:

RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: Electric Battery  
Lighting Equipment: Lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: SM/PM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

The buoy weight on page 1 includes battery.

Manufacturers:

Source of Design:                Adm of Navig & Hydro

Drawing Reference:                Denmark 9

## GENERAL INFORMATION

Name of Buoy: Vager I Unlighted

Country of Use: Denmark

Function: This is an unlighted buoy used to mark  
the waterways.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 810 Lbs.

Buoy Draft: 8.07 Ft.

Overall Buoy Length: 14.67 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.45 Ft.

Freeboard: No Mooring: 2.43 Ft.  
Minimum: 0.94 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 3.30 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: One Compartment

Hull Type: Cone

Counterweight Type: External Bar

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: None  
Lighting Equipment: None  
Sound Equipment: None  
Other Payload: None  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinkers Size: 950 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM (Est.)  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 4.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

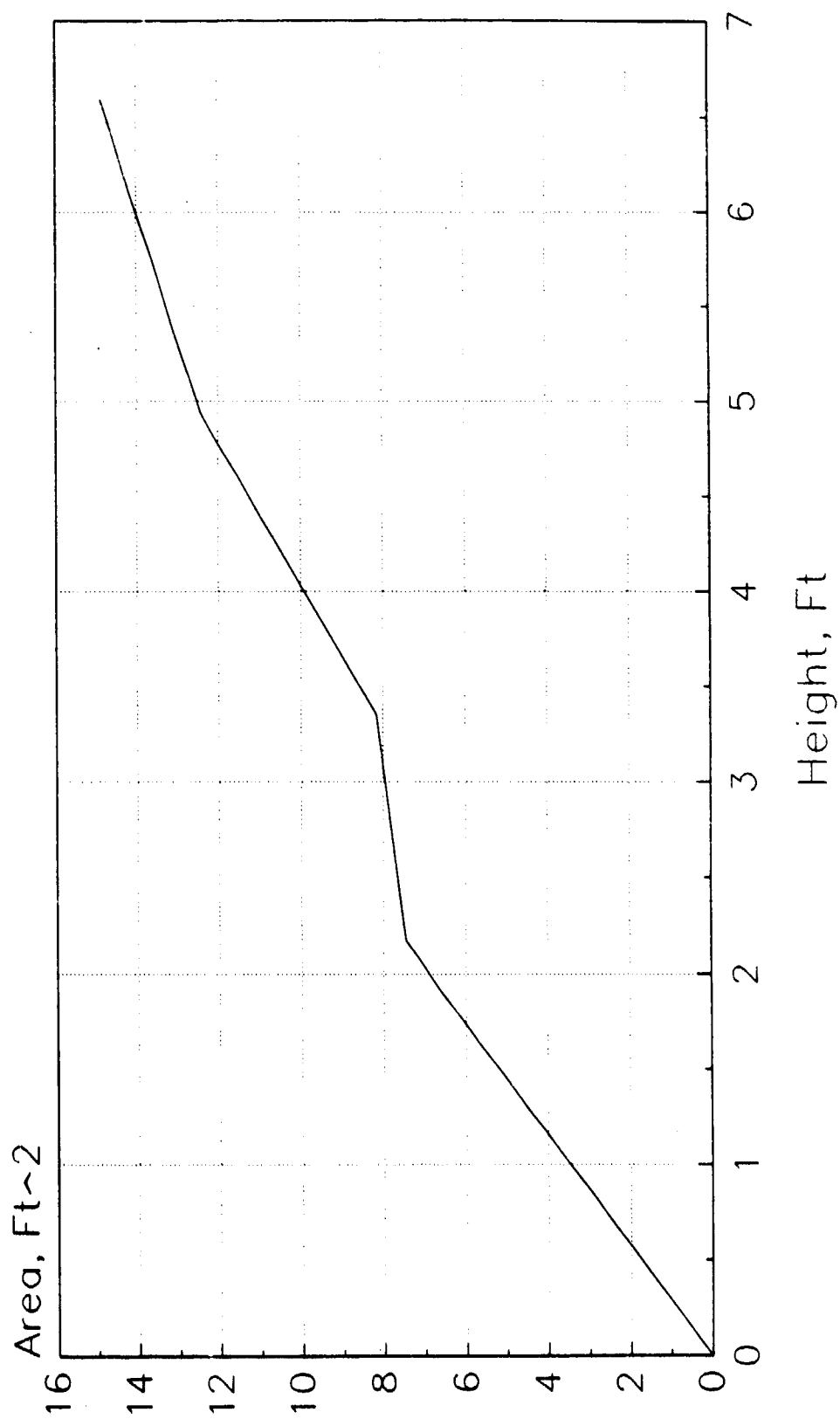
Manufacturers:

Source of Design:                        Adm of Navig & Hydro

Drawing Reference:                        Denmark 20

# Vager ! Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Vager II Unlighted

Country of Use: Denmark

Function: This is an unlighted buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 486 Lbs.

Buoy Draft: 6.40 Ft.

Overall Buoy Length: 12.29 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.79 Ft.

Freeboard: No Mooring: 2.17 Ft.  
Minimum: 0.90 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 2.35 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: One Compartment

Hull Type: Cone

Counterweight Type: External Bar



## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: None

Lighting Equipment: None

Sound Equipment: None

Other Payload: None

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Chain

Sinker Size: 700 Lbs.

Topmark Type: Lateral

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM & PM (Est)

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 3.8 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

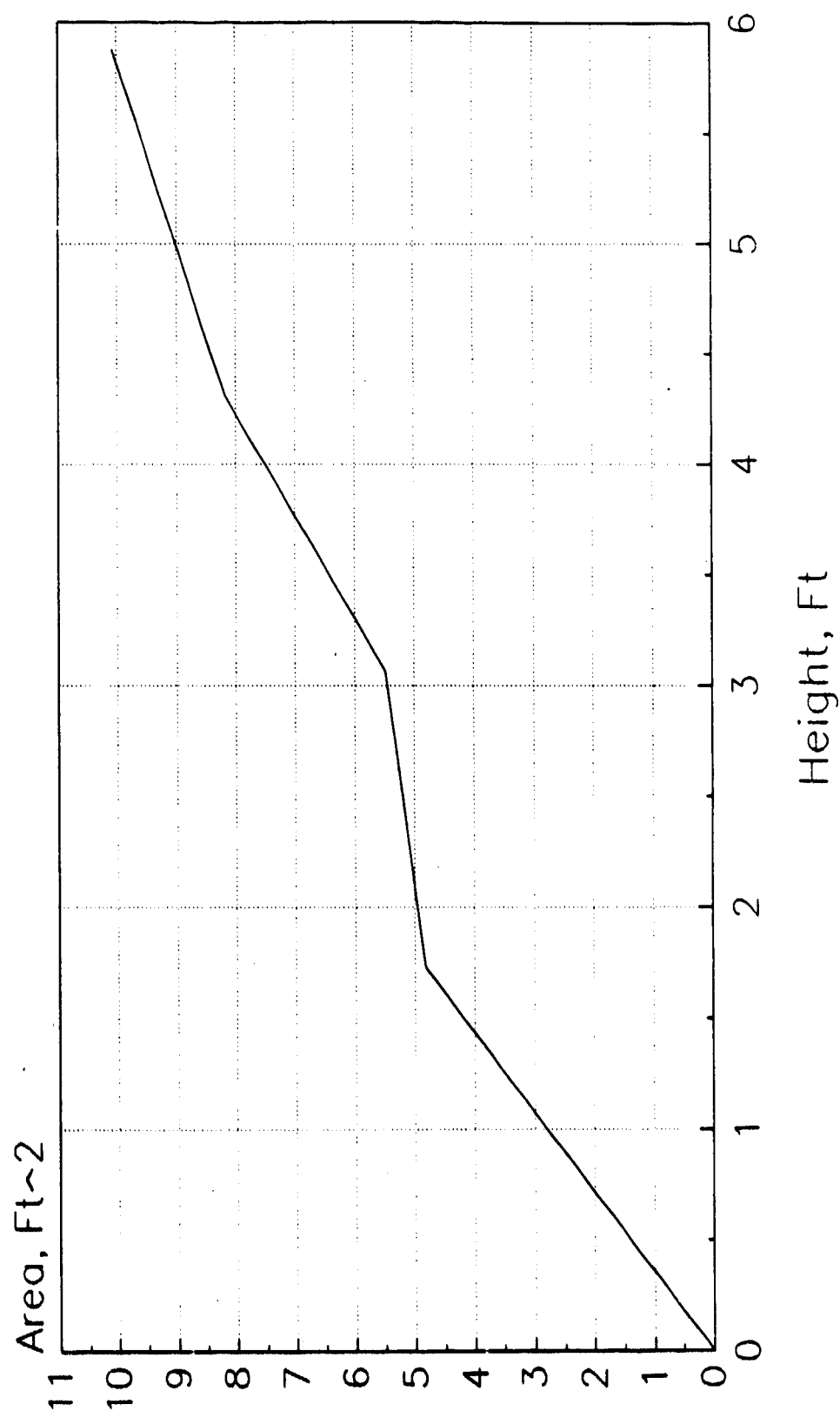
Manufacturers:

Source of Design:                    Adm of Navig & Hydro

Drawing Reference:                    Denmark 21

# Vager II Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Vager III Unlighted

Country of Use: Denmark

Function: This is an unlighted buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 282 Lbs.

Buoy Draft: 5.09 Ft.

Overall Buoy Length: 9.84 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.30 Ft.

Freeboard: No Mooring: 1.77 Ft.  
Minimum: 0.66 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.94 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: One Compartment

Hull Type: Cone

Counterweight Type: External Bar

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: None  
Lighting Equipment: None  
Sound Equipment: None  
Other Payload: None  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chain  
Sinker Size: 300 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM & PM (Est)  
Nominal Visual Range of Daymark: 1.4 Nmi.  
Radar Range: 3.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

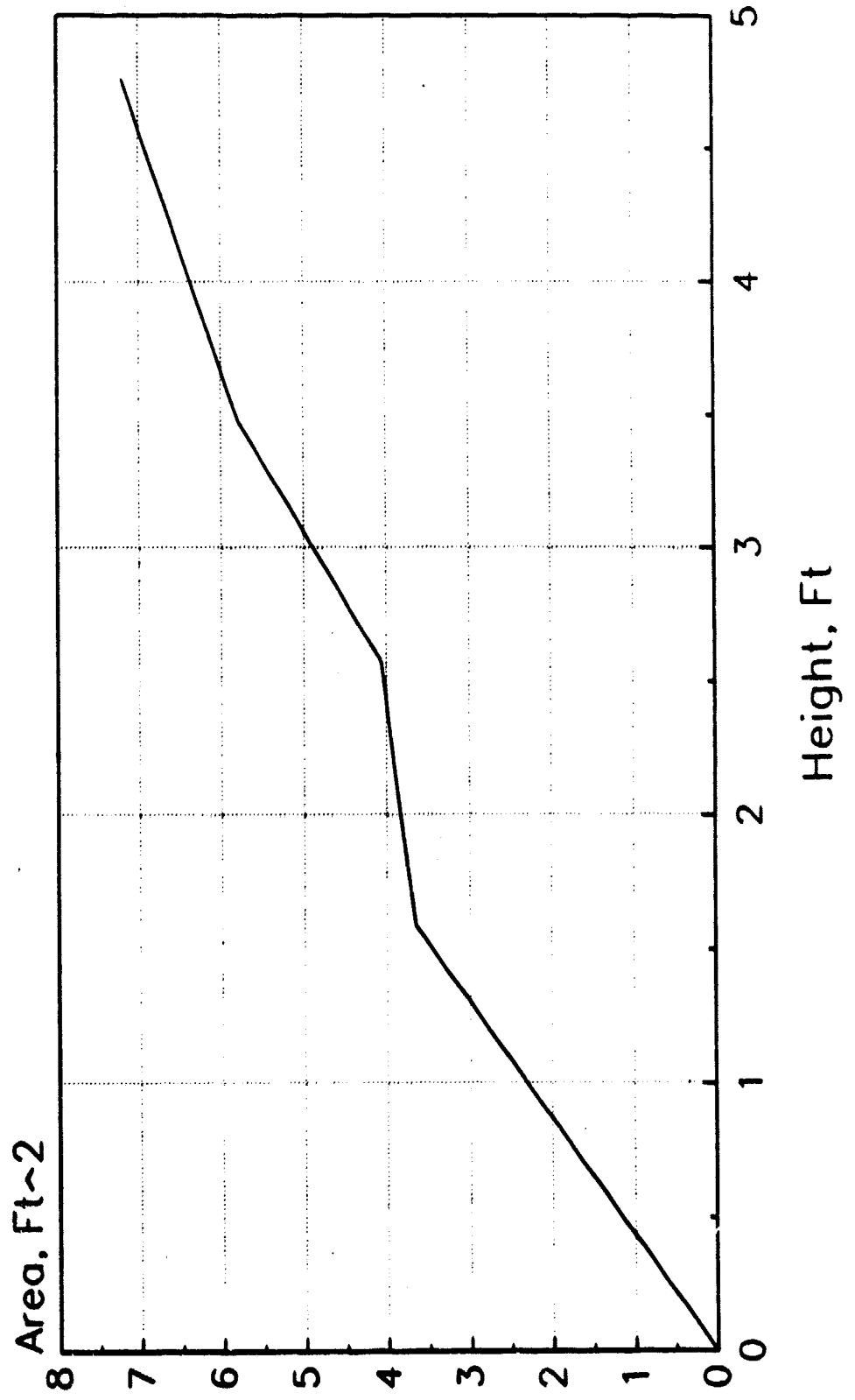
Manufacturers:

Source of Design: Adm of Navig & Hydro

Drawing Reference: Denmark 22

# Vager III Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Vager IV Unlighted  
Country of Use: Denmark  
Function: This is an unlighted buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	170 Lbs.
Buoy Draft:	4.26 Ft.
Overall Buoy Length:	8.20 Ft.
Focal Height of Light:	0.00 Ft.
Buoy Beam or Diameter:	1.64 Ft.
Freeboard:	No Mooring: 1.25 Ft. Minimum: 0.55 Ft.
Pounds Per Inch Immersion:	0 Lbs.
Metacentric Height:	0.66 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave Following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Steel Topmark : Counterweight: Steel
Coating/Coloring System:	
Subdivision:	One Compartment
Hull Type:	Cone
Counterweight Type:	External Bar



# RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: None

Lighting Equipment: None

Sound Equipment: None

Other Payload: None

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Chain

Sinker Size: 80 Lbs.

Topmark Type: Lateral

Number of Padeyes: 1

# OPERATING CHARACTERISTICS

Operating Environment: SM & PM (Est)

Nominal Visual Range of Daymark: 1.2 Nmi.

Radar Range: 2.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

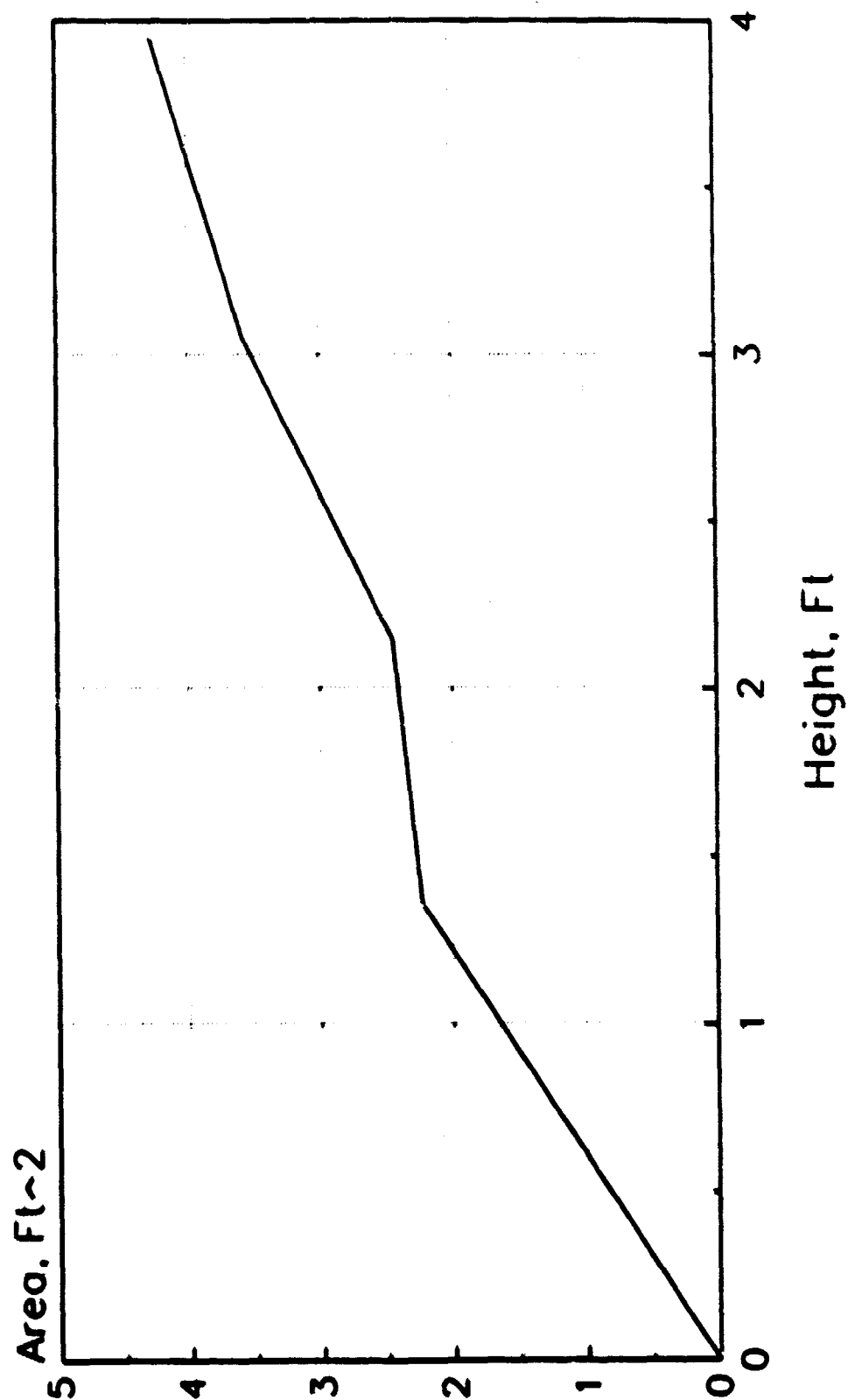
Manufacturers:

Source of Design: Adm of Navig & Hydro

Drawing Reference: Denmark 23

# Vager IV Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 9'0" General Purpose Unlighted

Country of Use: England

Function: For use with standard cage or batwing  
daymarks, wave actuated bell where  
required, and radar reflector.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,056 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 16.25 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 9.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 340 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: Wave actuated bell, where reqd

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: SM, Shallow Water

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

Has free flooding keel for water ballast.

General Notes

Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 12

## GENERAL INFORMATION

Name of Buoy: Cardinal Class I, 10x50 LWBR

Country of Use: England

Function: Acetylene gas buoy, with wave actuated bell, and whistle or LIHA 600 electric fog signal.

Exposed deep water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 20,375 Lbs.

Buoy Draft: 22.70 Ft.

Overall Buoy Length: 49.63 Ft.

Focal Height of Light: 19.40 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

### RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: 2xElect.batt.packs, 2xAcet.cyl.

Lighting Equipment: 200mm Acetylene lantern

Sound Equipment: Wave act.whist.or el.fog signl

Other Payload: Wave act. bell, Radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Various Cardinal

Number of Padeyes: 4

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 5.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Internal chain is provided to limit fouling in tail tube.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

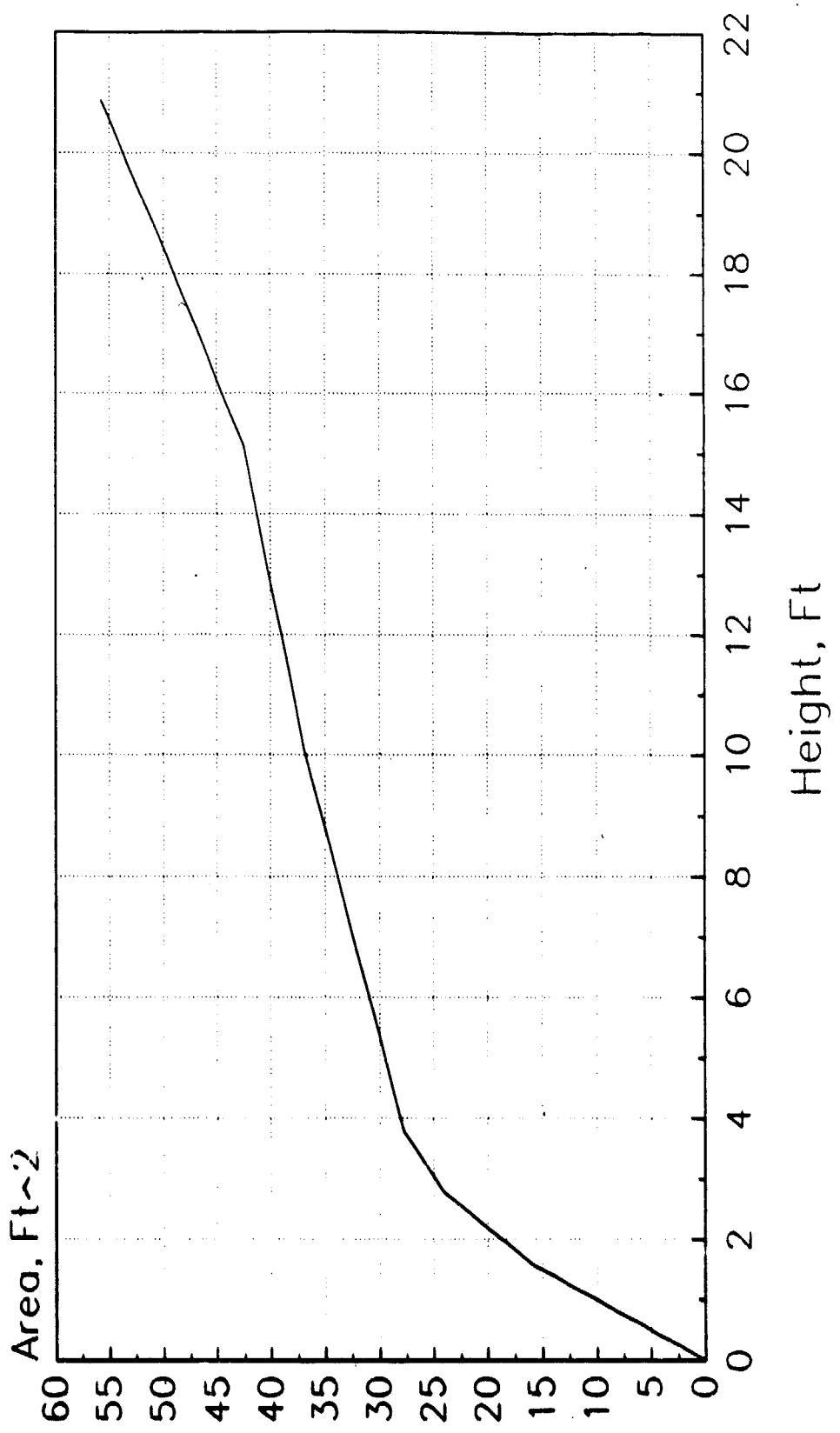
Manufacturers:

Source of Design:                        Trinity House

Drawing Reference:                        England 5

# Cardinal Class I, 10x50 LWBR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Cardinal Class I, 10x51 LWBR

Country of Use: England

Function: Acetylene gas buoy, with wave actuated whistle or bell, and AGA LIHA 600 electric fog signal.

Exposed Deep Water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 21.047 Lbs.

Buoy Draft: 22.80 Ft.

Overall Buoy Length: 50.71 Ft.

Focal Height of Light: 19.00 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: 2xElect.batt.pack, 2xAcet.cyl.

Lighting Equipment: 375mm Dalen acetylene lantern

Sound Equipment: Wave act. whistle or bell

Other Payload: AGA LIHA 600 el. fog sig,Rad R

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Various Cardinal

Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.1 Nmi.

Radar Range: 5.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Internal chain is provided to limit fouling in tail tube.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

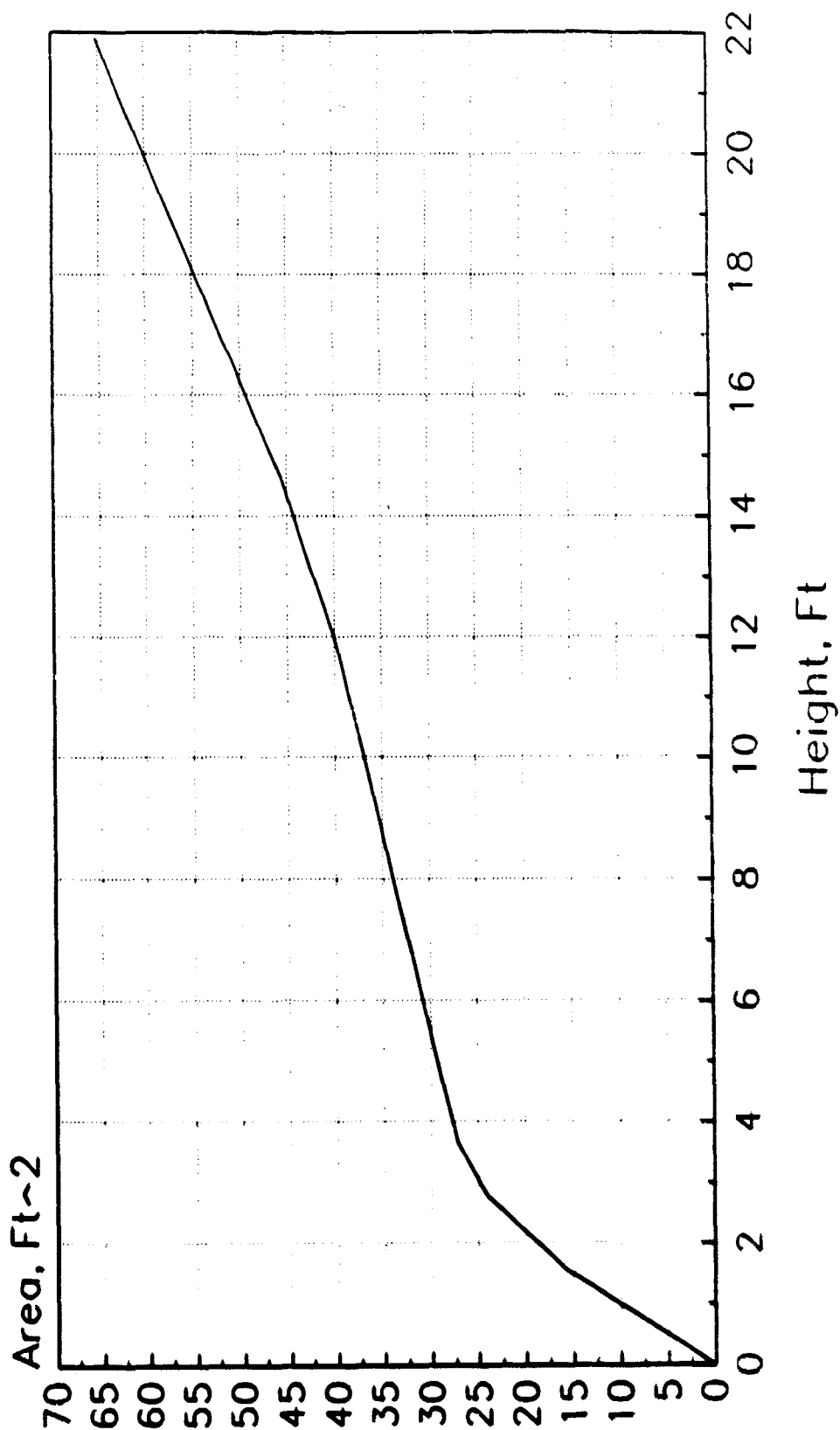
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 4

# Cardinal Class I, 10x51 LWBR

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Cardinal Class II Pillar Mk. I

Country of Use: England

Function: Acetylene gas bouy, wave actuated bell fitted when required.

Moderate to shallow water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 10,696 Lbs.

Buoy Draft: 4.50 Ft.

Overall Buoy Length: 17.83 Ft.

Focal Height of Light: 8.60 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: AK130 Acetylene cylinders.

Lighting Equipment: 200mm Acetylene lantern

Sound Equipment: Wave actuated bell (when reqd)

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Various Cardinal

Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM, shallow water

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 4.5 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:  
    Has free flooding keel for water ballast.

General Notes  
    Weight includes 922 pound bell.

    Radar reflector is omnidirectional.

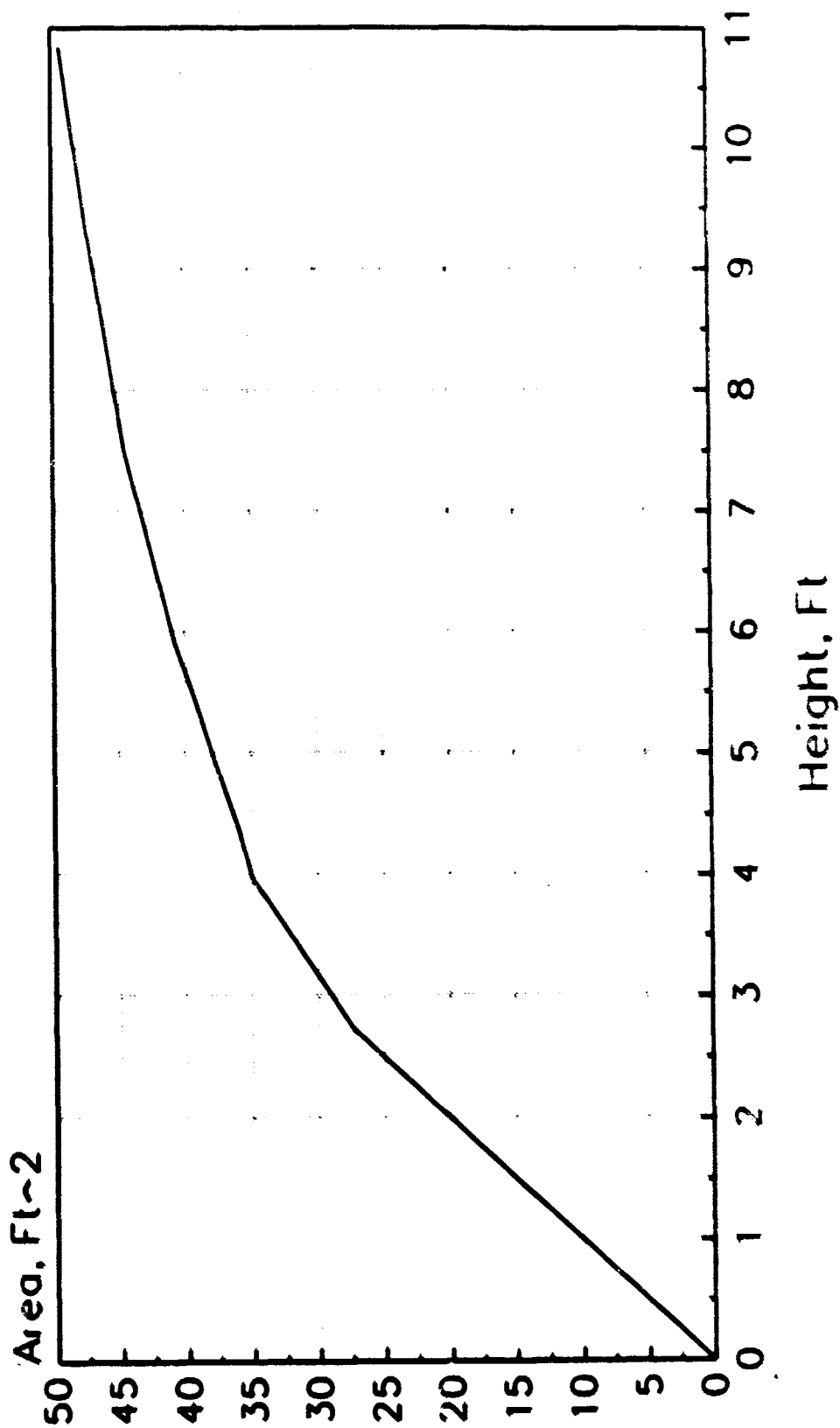
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 7

# Cardinal Class II Pillar Mk. I

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 1 Can

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,736 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 12.67 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 12.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz, near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

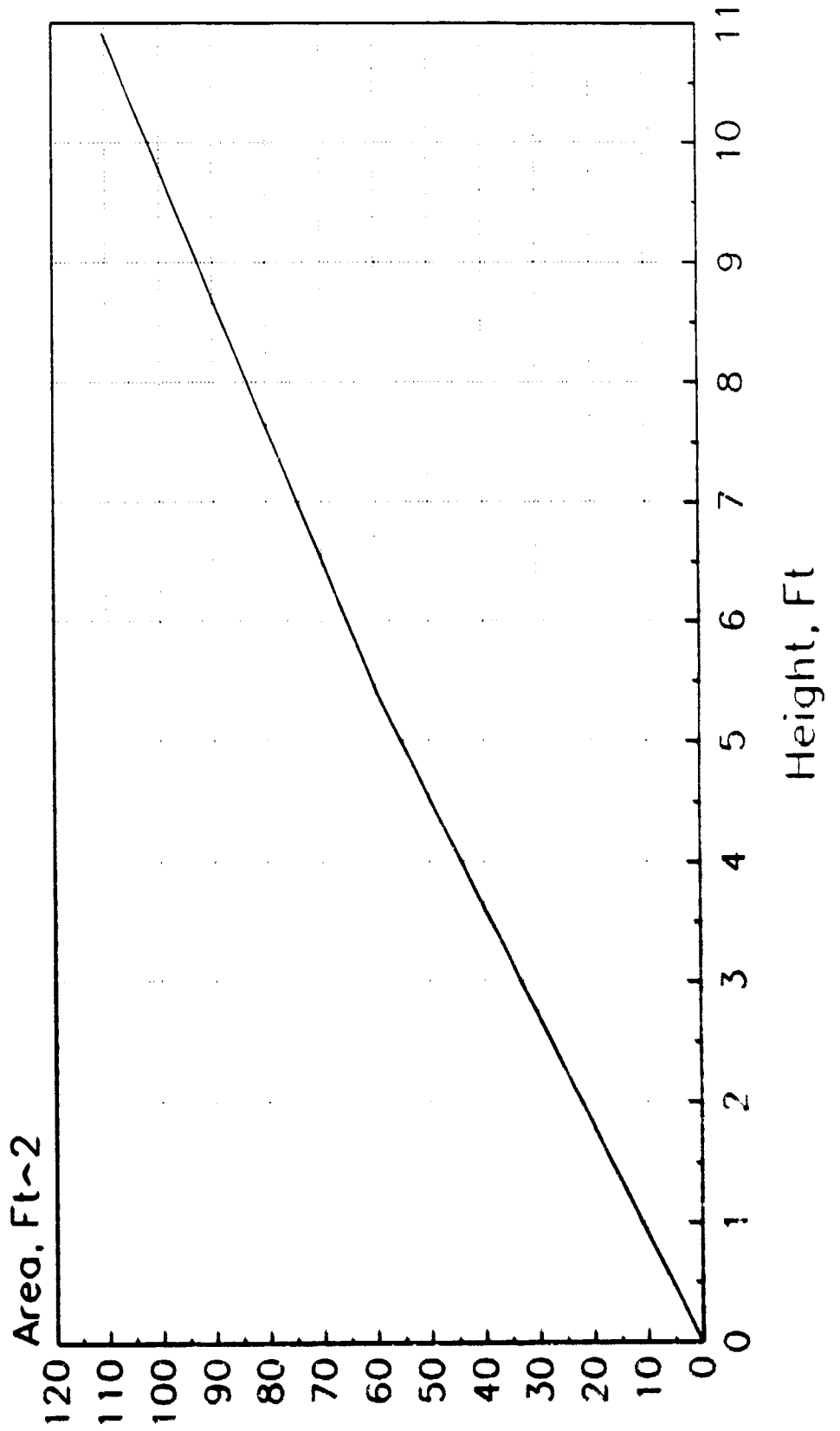
Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 15

# Class 1 Can

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Class 1 Conical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,736 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 16.33 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 12.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:



## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

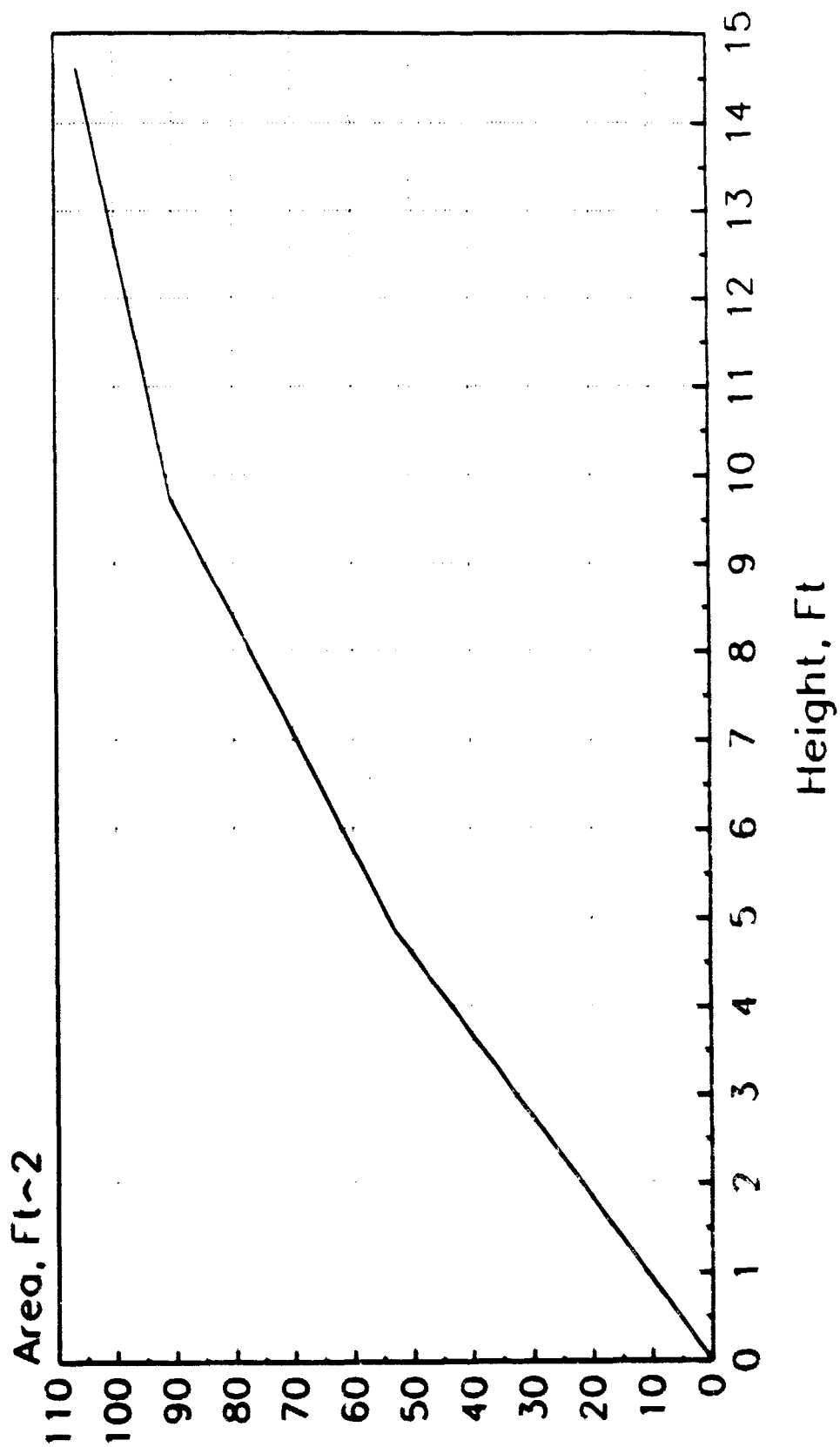
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 15

# Class 1 Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 1 Spherical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,176 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 12.67 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 12.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                   England 15

## GENERAL INFORMATION

Name of Buoy: Class 2 Can

Country of Use: England

Function: Standard Unlighted Buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,386 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 10.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Horiz, near WL

Subdivision: Dished

Hull Type:

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 1.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

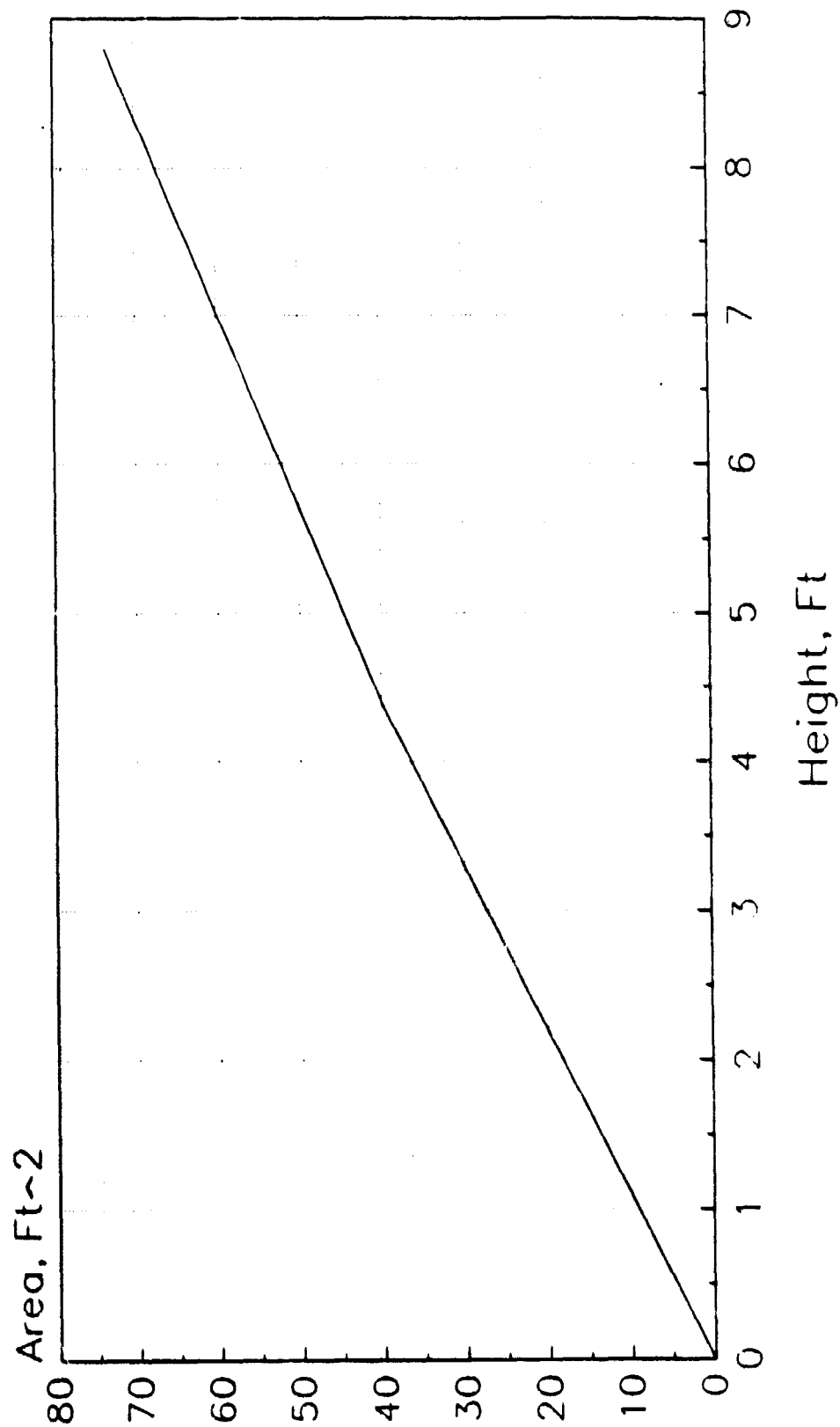
Source of Design:                    Trinity House

Drawing Reference:                    England 15



# Class 2 Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 2 Conical

Country of Use: England

Function: Standard Unlighted Buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,273 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 13.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 1.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

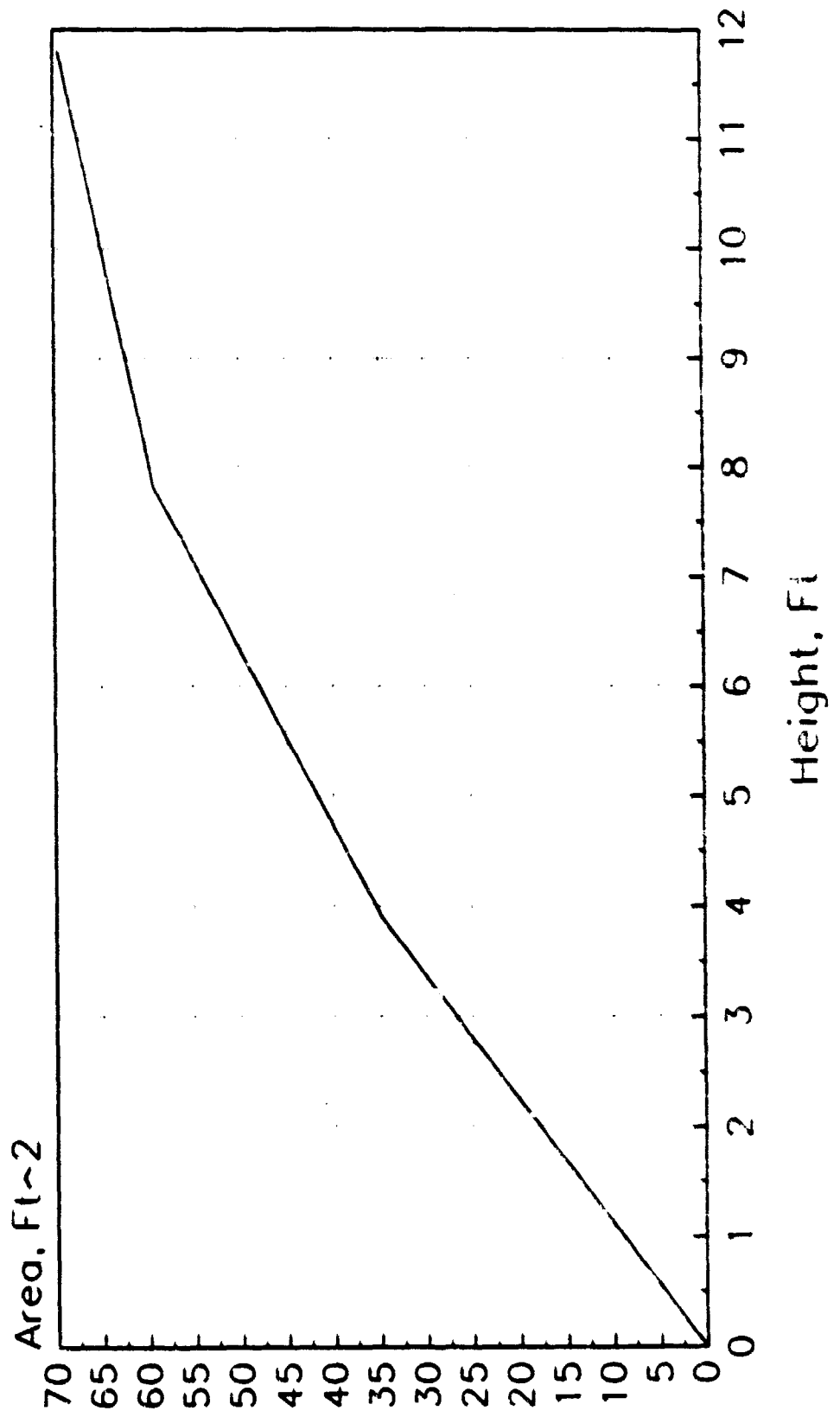
Manufacturers:

Source of Design: Trinity House

Drawing Reference: England 15

# Class 2 Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 2 Spherical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,048 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 10.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 15



## GENERAL INFORMATION

Name of Buoy: Class 3 Can

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 4,032 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 8.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 8.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz, near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.8 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

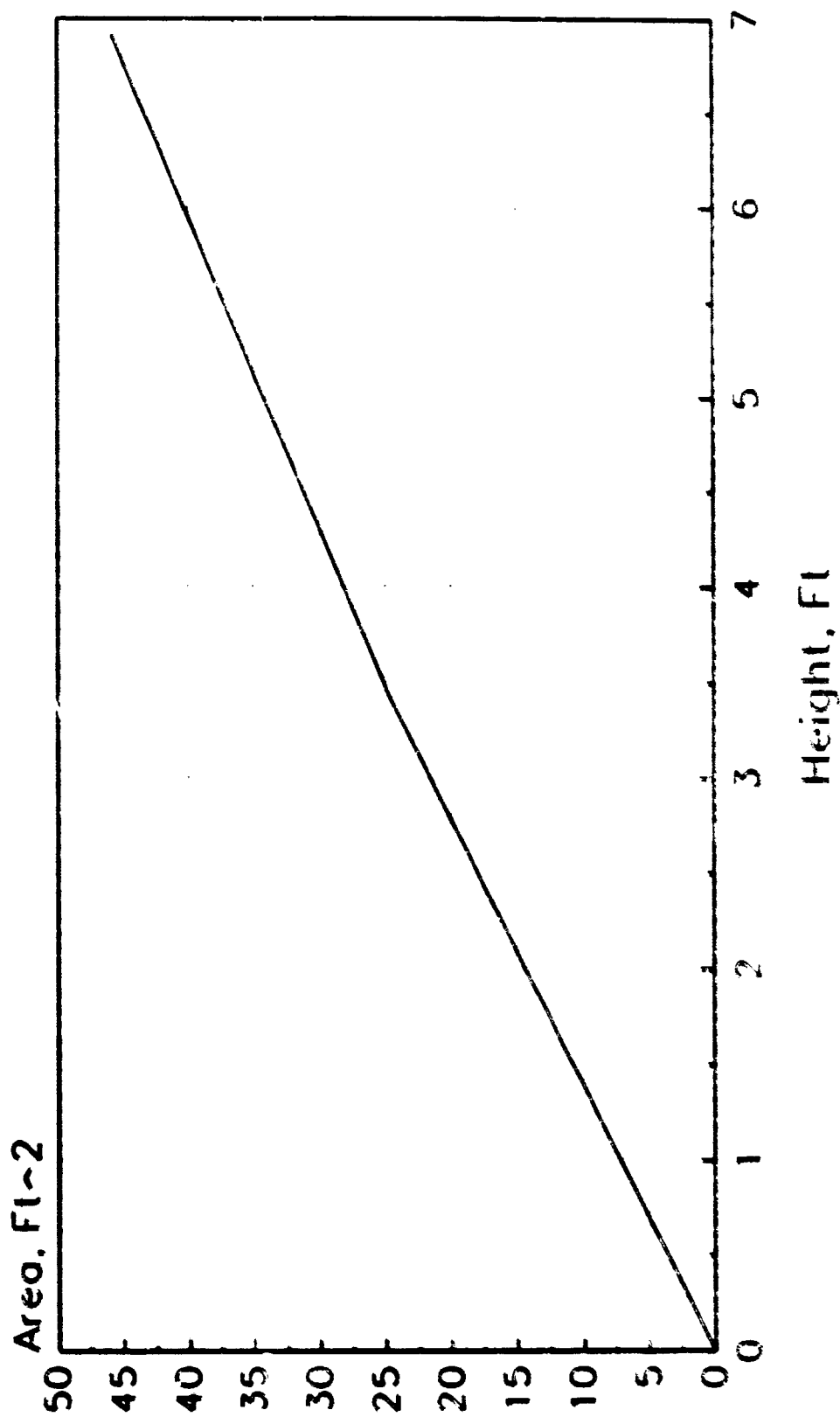
Manufacturers:

Source of Design: Trinity House

Drawing Reference: England 15

# Class 3 Can

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Class 3 Conical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,943 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 10.83 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 8.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.7 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

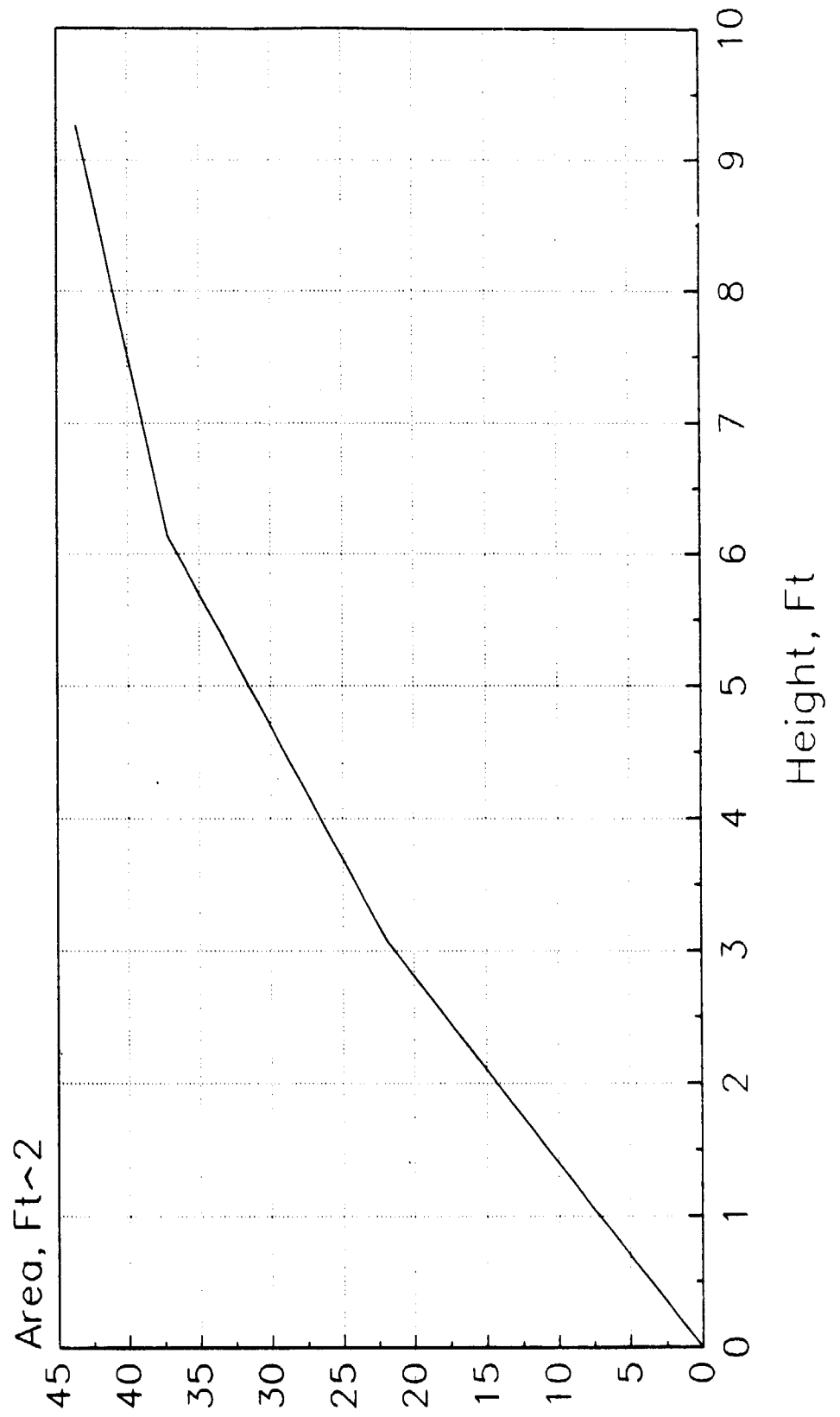
Manufacturers:

Source of Design: Trinity House

Drawing Reference: England 15

# Class 3 Conical

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: Class 3 Spherical ,

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,808 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 8.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 8.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 15

## GENERAL INFORMATION

Name of Buoy: Class 4 Can

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,352 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 6.33 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 6.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 2.3 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:                \$0  
                         Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

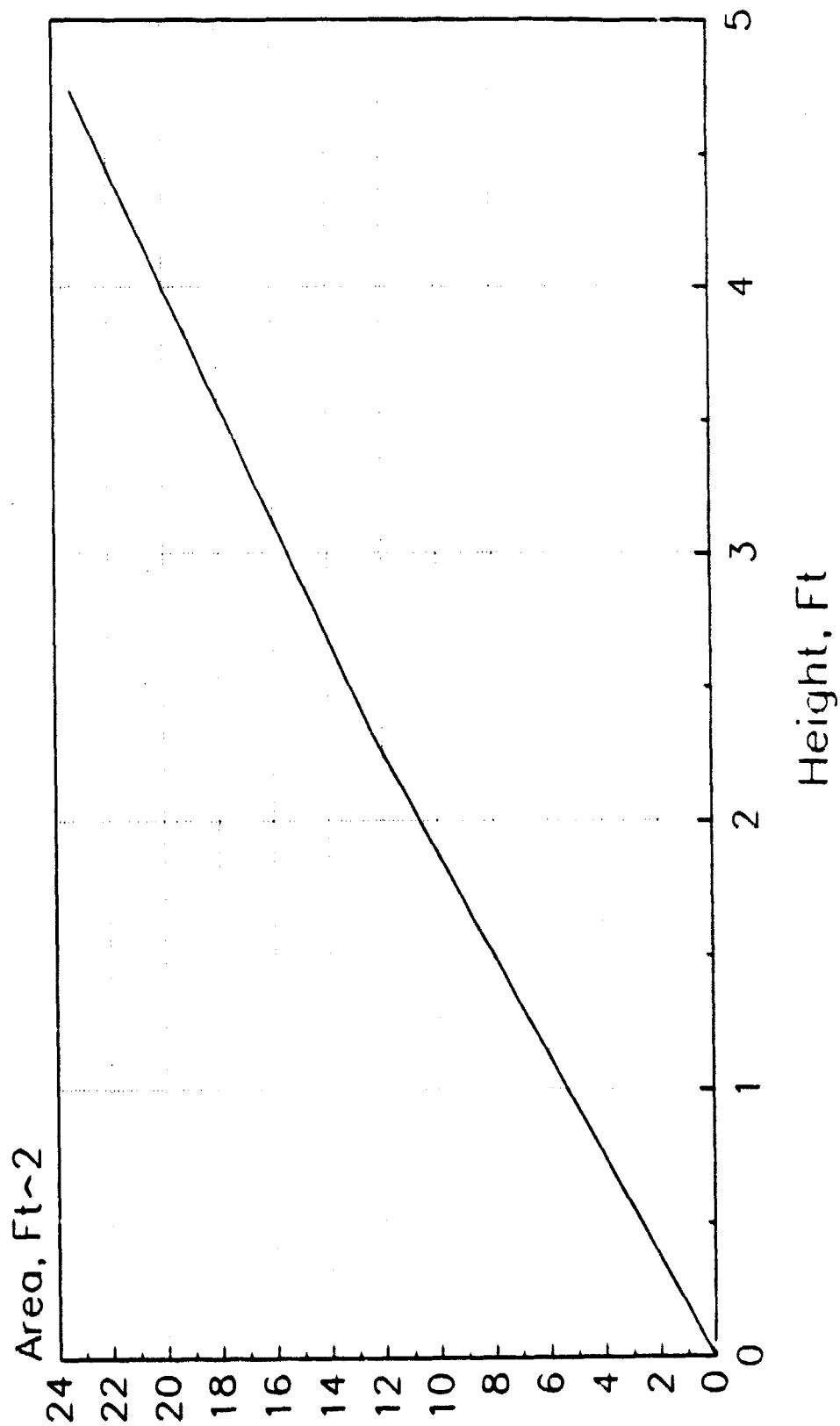
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 15

# Class 4 Can

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Class 4 Conical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	2,352 Lbs.
Buoy Draft:	0.00 Ft.
Overall Buoy Length:	8.17 Ft.
Focal Height of Light:	0.00 Ft.
Buoy Beam or Diameter:	6.00 Ft.
Freeboard:	No Mooring: 0.00 Ft. Minimum: 0.00 Ft.
Pounds Per Inch Immersion:	0 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Topmark : Counterweight:
Coating/Coloring System:	
Subdivision:	Horiz., near WL
Hull Type:	Dished
Counterweight Type:	



## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.3 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

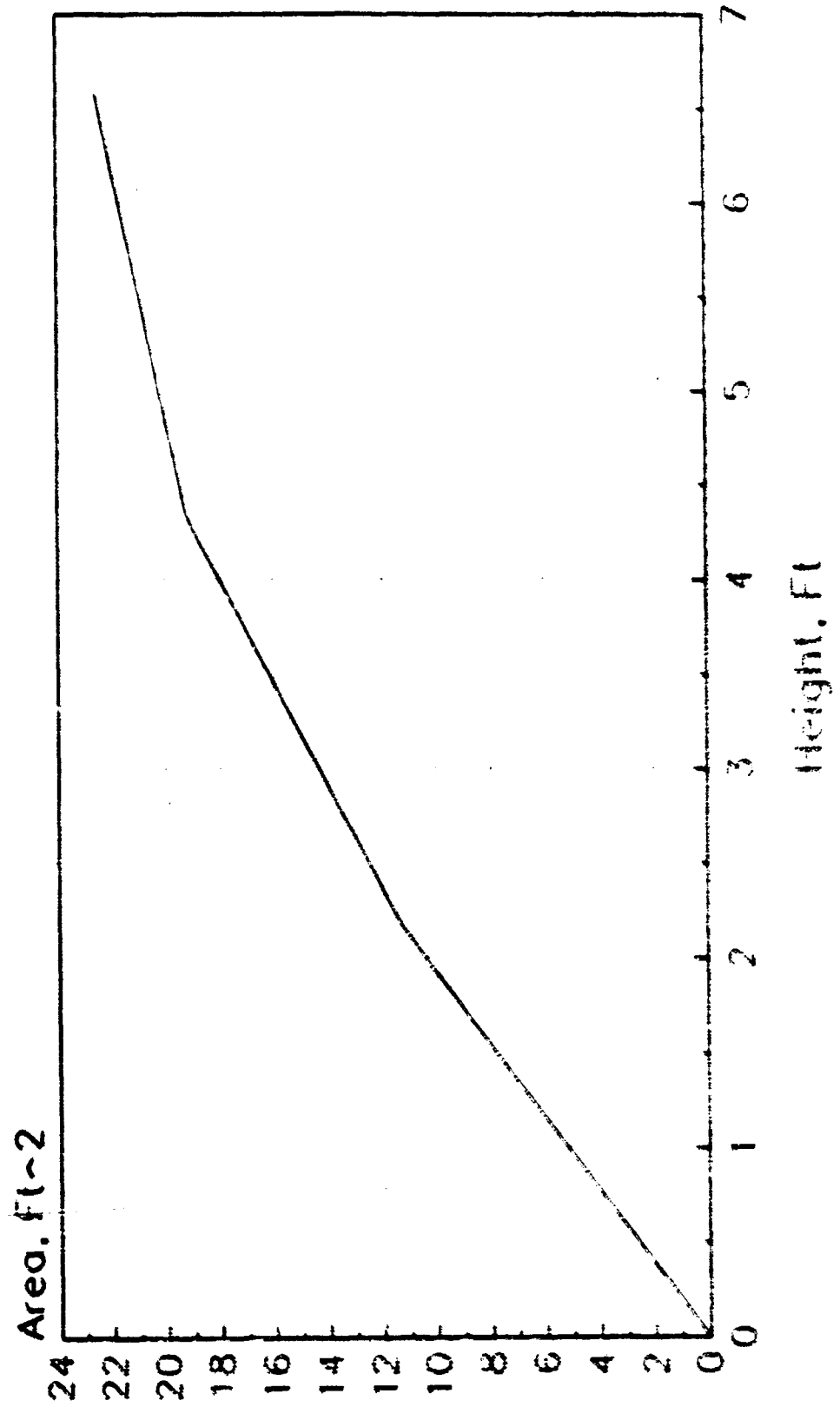
Manufacturers:

Source of Design:                              Trinity House

Drawing Reference:                              England 15

# Class 4 Conical

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 4 Spherical

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,353 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 6.33 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 6.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:           \$0  
                         Monthly Servicing:     \$0

Service Life:                               0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 15

## GENERAL INFORMATION

Name of Buoy: Class 5 Can

Country of Use: England

Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,792 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 5.25 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

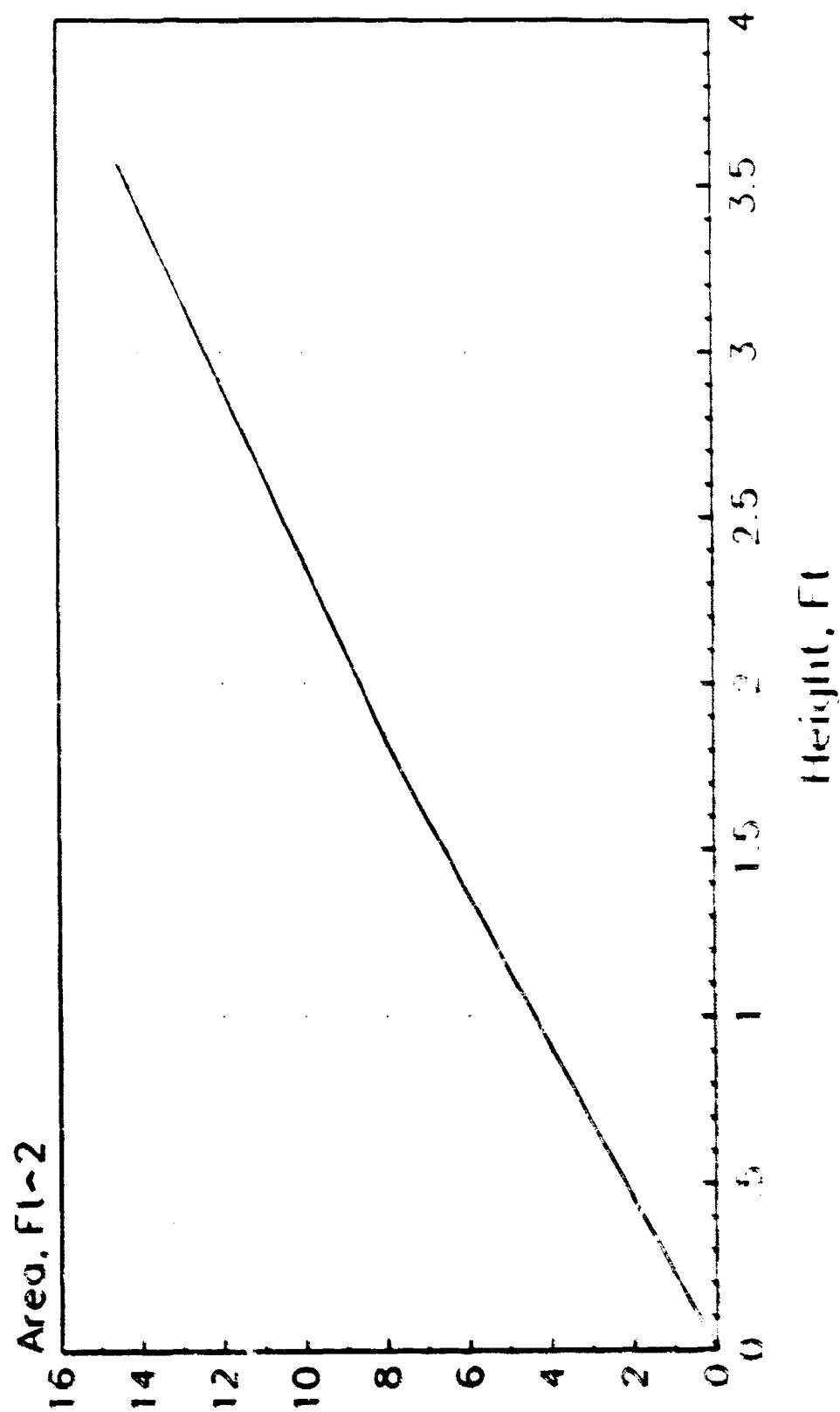
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                          England 15

# Class 5 Can

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class 5 Conical

Country of Use: England

Function:

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,792 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 6.75 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., near WL

Hull Type: Dished

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

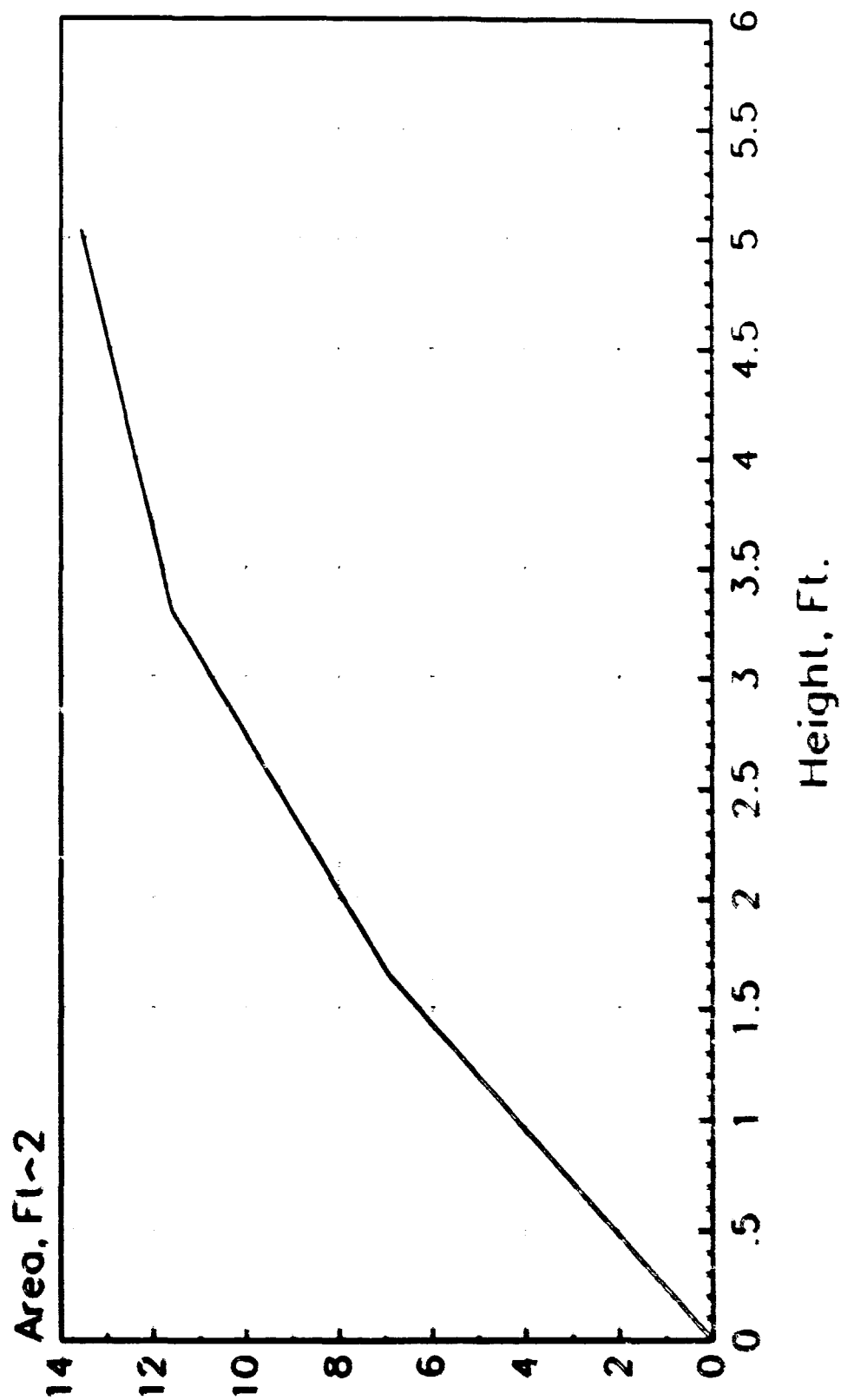
Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 15

# Class 5 Conical

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Class 5 Spherical  
Country of Use: England  
Function: Standard Unlighted Buoy

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,680 Lbs.  
Buoy Draft: 0.00 Ft.  
Overall Buoy Length: 5.25 Ft.  
Focal Height of Light: 0.00 Ft.  
Buoy Beam or Diameter: 5.00 Ft.  
Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.  
Pounds Per Inch Immersion: 0 Lbs.  
Metacentric Height: 0.00 Ft.  
Reserve Buoyancy: 0 Lbs.  
Wave Motion Response: Wave following  
Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:  
Coating/Coloring System:  
Subdivision: Horiz., near WL  
Hull Type: Dished  
Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: none

Lighting Equipment: none

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:       \$0  
                         Monthly Servicing:     \$0

Service Life:                               0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 15

## GENERAL INFORMATION

Name of Buoy: Class V conical, lighted

Country of Use: England

Function: Fiberglass, Motivators Type.

Used - River exe.  
Shallow water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 400 Lbs.

Buoy Draft: 1.15 Ft.

Overall Buoy Length: 7.80 Ft.

Focal Height of Light: 6.00 Ft.

Buoy Beam or Diameter: 4.75 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Foam  
Tower : Fiberglass GRP  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Foam filled

Hull Type: Cylindrical, Dished

Counterweight Type:

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Battery pack integ. w/lantern  
Lighting Equipment: "Stone-Platt" electric lantern  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM, rivers, shallow  
Nominal Visual Range of Daymark: 2.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 2 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes  
                 Weight includes battery pack.

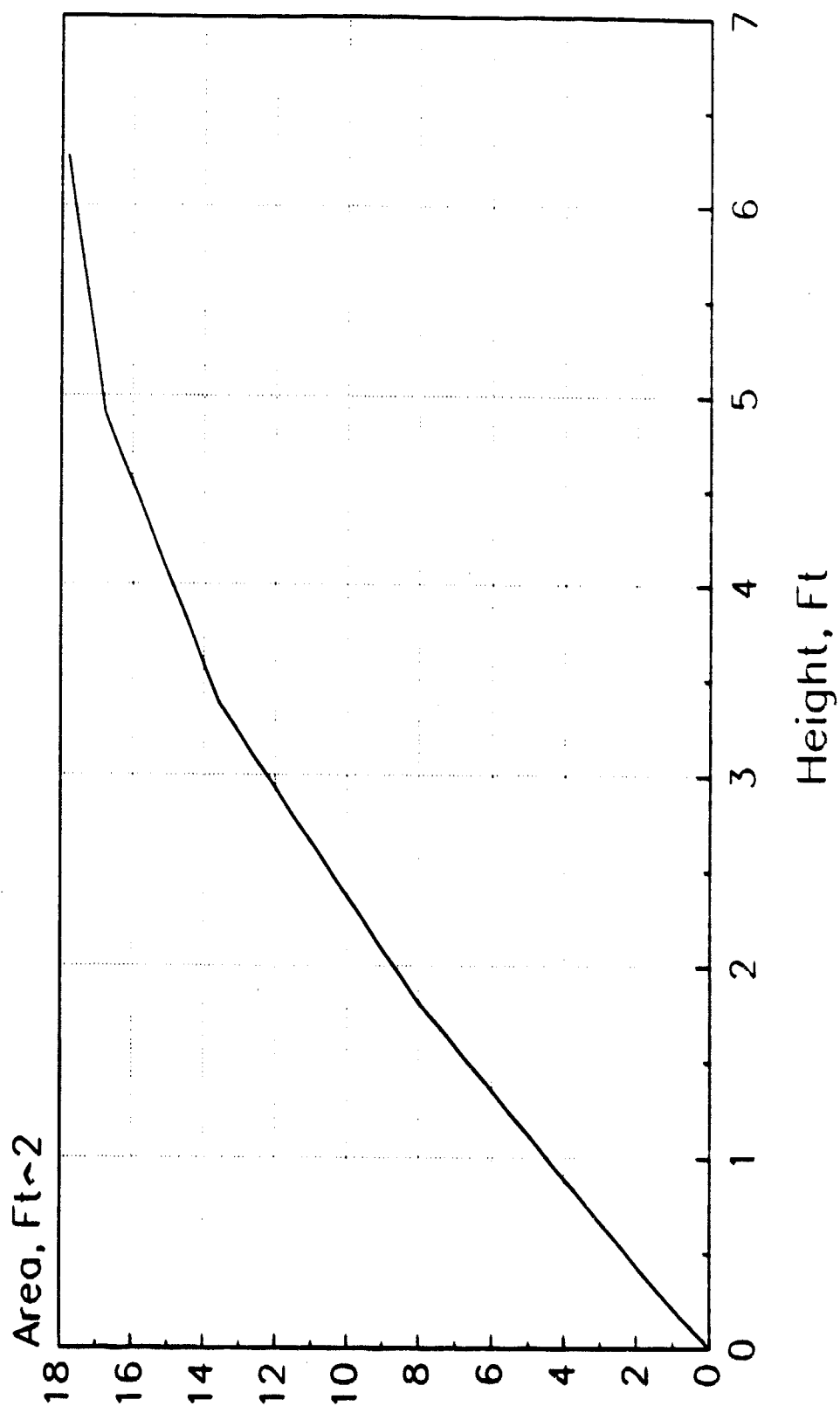
Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 14

# Class V Conical, Lighted

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: High Focal Plane, 10x39 LWR

Country of Use: England

Function: Acetylene lantern with wave actuated  
whistle and/or bell.

For exposed locations.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 17,895 Lbs.

Buoy Draft: 20.00 Ft.

Overall Buoy Length: 39.00 Ft.

Focal Height of Light: 17.40 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

#### RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: A130 Acetylene cylinder

Lighting Equipment: 200mm Acetylene lantern

Sound Equipment: Wave pow. air whistle or bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type:

Number of Padeyes: 4

#### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 6.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Internal chain is provided to limit fouling in tail tube.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:

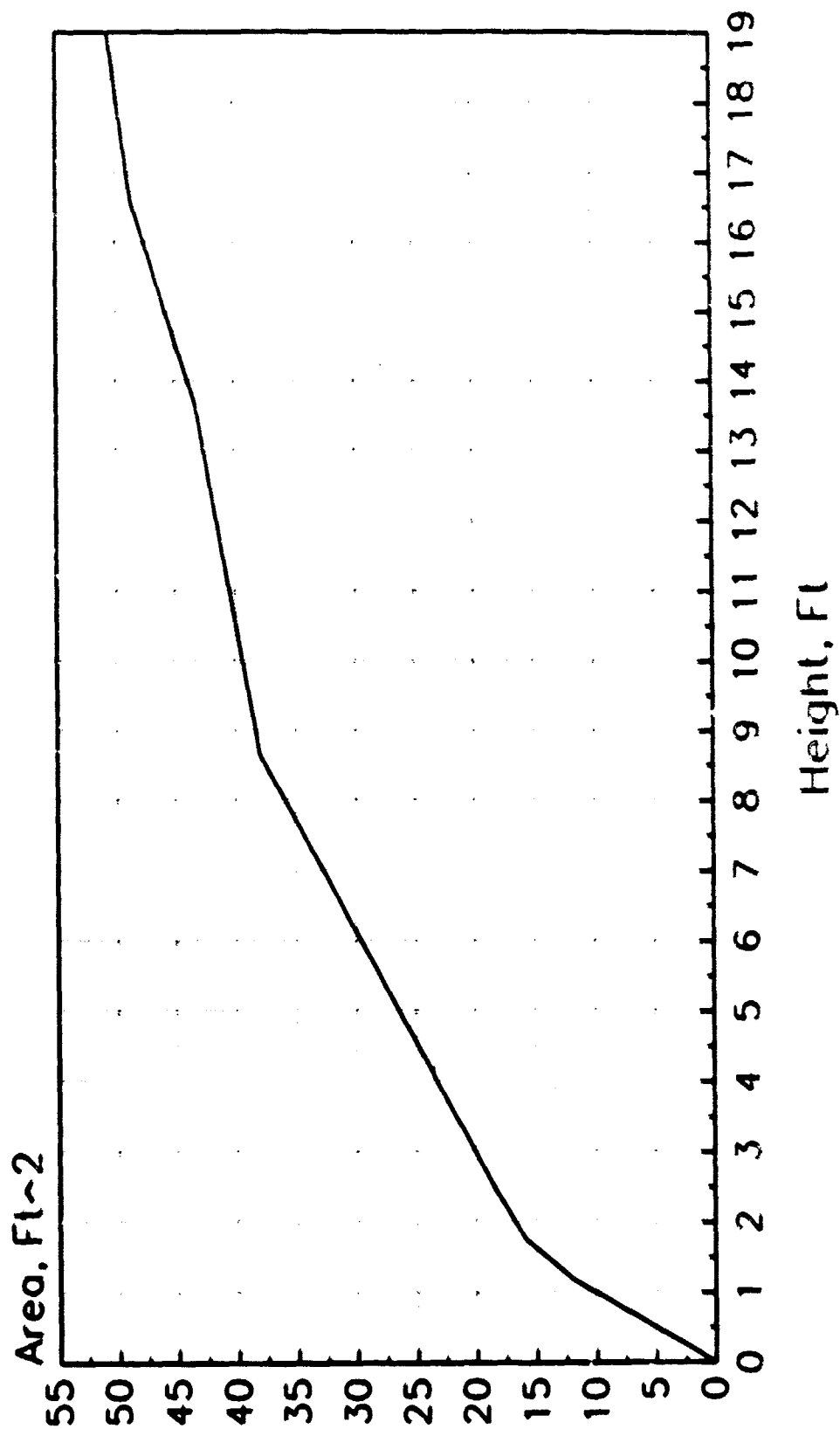
Source of Design:                            Trinity House

Drawing Reference:                           England 3



# High Focal Plane, 10x39 LWR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: High Focal Plane, 10x43 LWR

Country of Use: England

Function: Acetylene lantern with wave actuated  
whistle & CO2 powered automatic bell.

For exposed locations.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 24,083 Lbs.

Buoy Draft: 22.40 Ft.

Overall Buoy Length: 43.25 Ft.

Focal Height of Light: 19.20 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

RELATED EQUIPMENT

Number of Power Sources: 8

Type of Power Sources: 2 Acetylene bottles, 6 CO2 cylinder

Lighting Equipment: 200mm Acetylene lantern

Sound Equipment: Wave act. whistle, CO2, pow. bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type:

Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 6.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:      \$0

Service Life:                      0.0 Yrs.

Maintenance Interval:              0 Mos.

Maintenance Notes:

Special Features:

Internal chain is provided to limit fouling in tail tube.

Stability Notes:

General Notes

Weight includes 2 acetylene and 6 CO2 cylinders.

Radar reflector is omnidirectional.

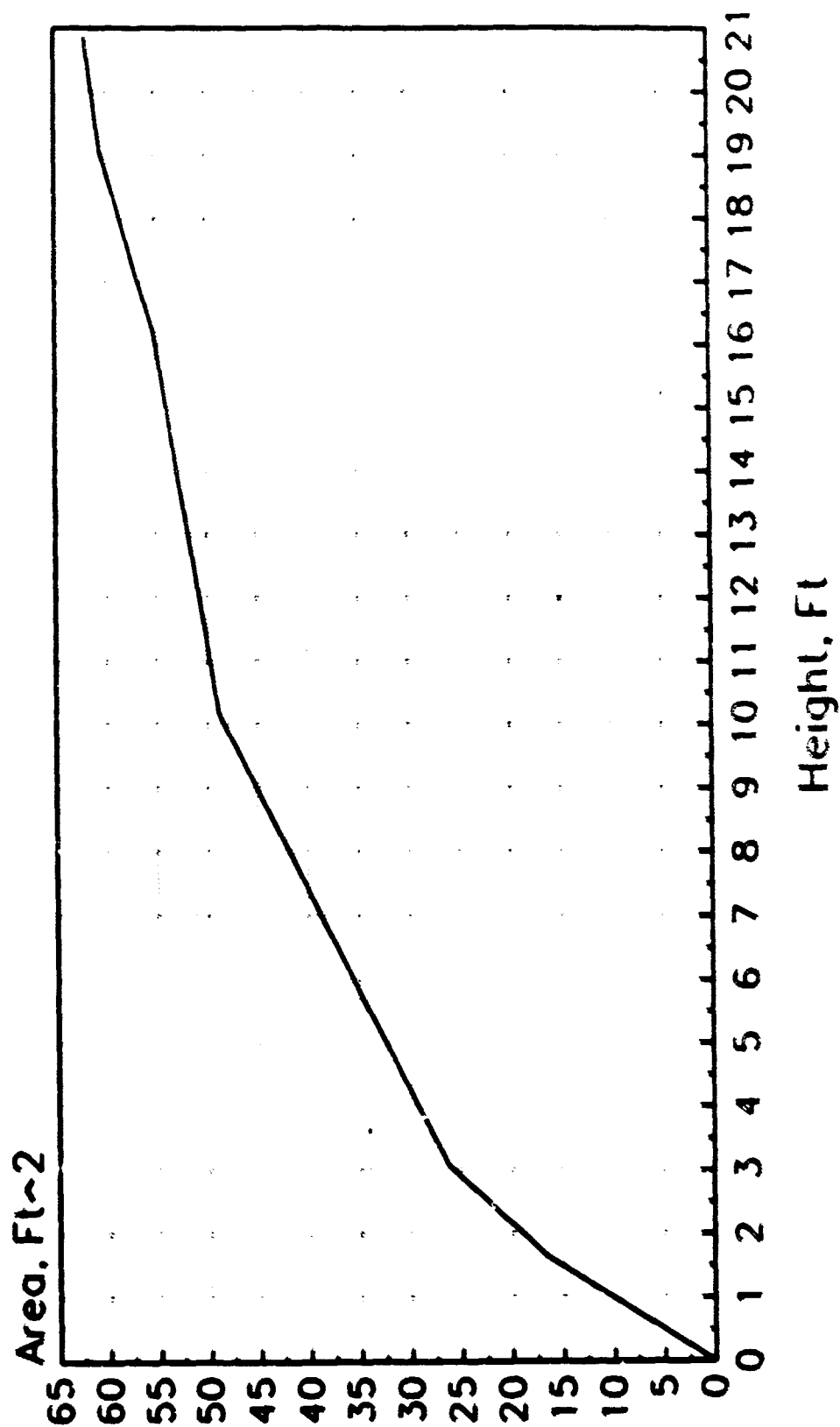
Manufacturers:

Source of Design:                  Trinity House

Drawing Reference:                England 2

# High Focal Plane, 10x43 LWR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: High Focal Plane, 10x44 LWR

Country of Use: England

Function: 375mm DALEN light, wave powered whistle  
and automatic electric powered fog  
signal.

For exposed locations

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 23,400 Lbs.

Buoy Draft: 22.10 Ft.

Overall Buoy Length: 44.08 Ft.

Focal Height of Light: 20.00 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

### RELATED EQUIPMENT

Number of Power Sources: 42

Type of Power Sources: 40Batt. 2packs, 2 Acetyl.botts

Lighting Equipment: AGA 375mm Dalen lantern

Sound Equipment: Wave powered air whistle

Other Payload: Auto.elect fog sig, Radar Ref

Daymark Area: 30.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: none

Number of Padeyes: 4

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.2 Nmi.

Radar Range: 4.5 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Internal chain is provided to limit fouling in tail tube.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:

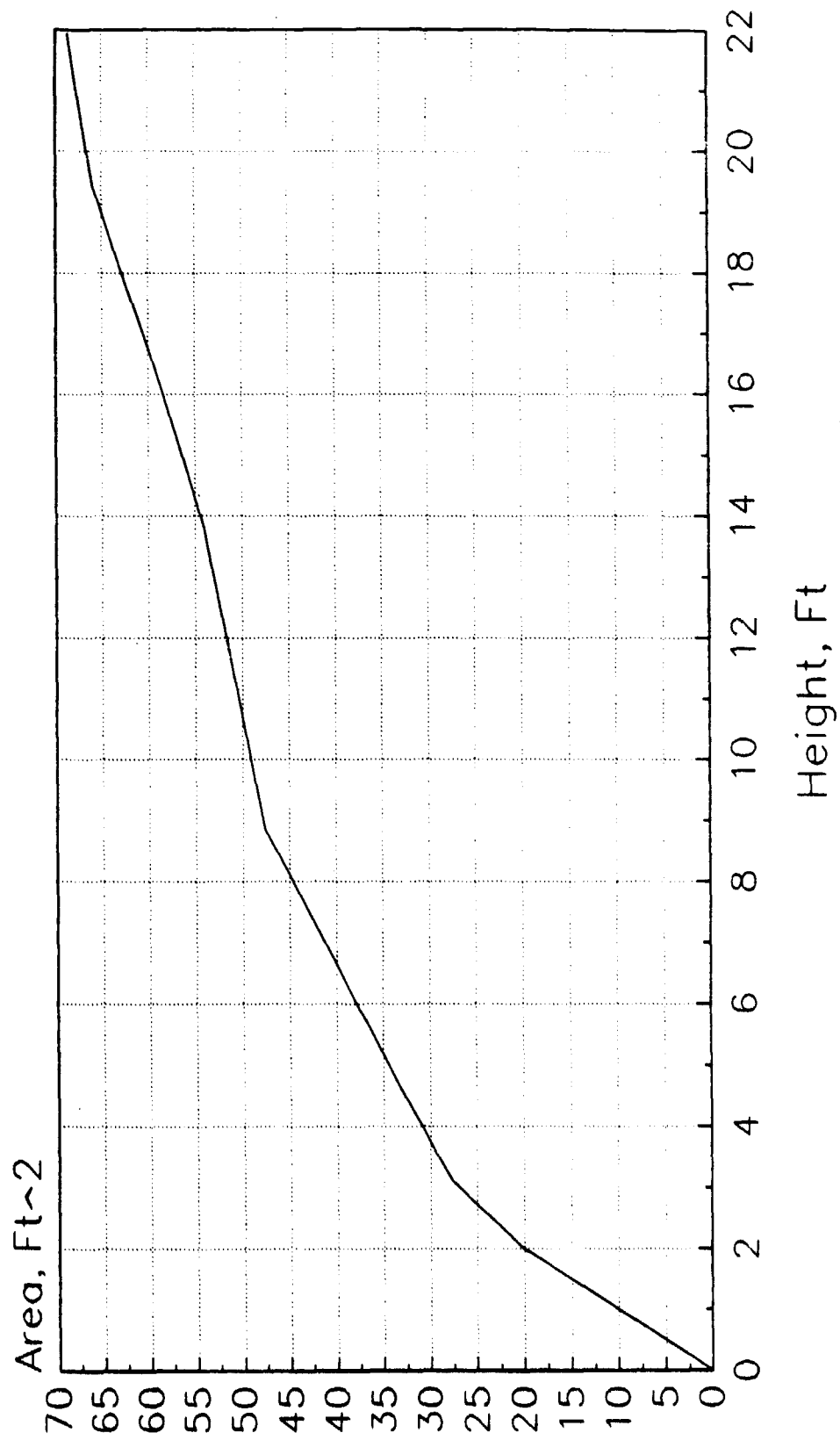
Source of Design:                        Trinity House

Drawing Reference:                        England 1



# High Focal Plane, 10x44 LWR

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Keel Type Auto CO2 Bell, Light

Country of Use: England

Function: Acetylene lantern, automatic CO2  
actuated bell, cage type superstructure.

Moderate water depth.

Date Of Last Update For This Record: 11/09/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 16,577 Lbs.

Buoy Draft: 8.10 Ft.

Overall Buoy Length: 19.75 Ft.

Focal Height of Light: 10.10 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 6  
Type of Power Sources: 4 CO2 cylnd, 2 Acetylene cylnd  
Lighting Equipment: 200mm Acetylene Lantern  
Sound Equipment: CO2 actuated bell  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                        0.0 Yrs.

Maintenance Interval:                0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:  
    Has free flooding lower chamber (keel) for ballast.

General Notes  
    Weight includes CO2 and acetylene gas cylinders.

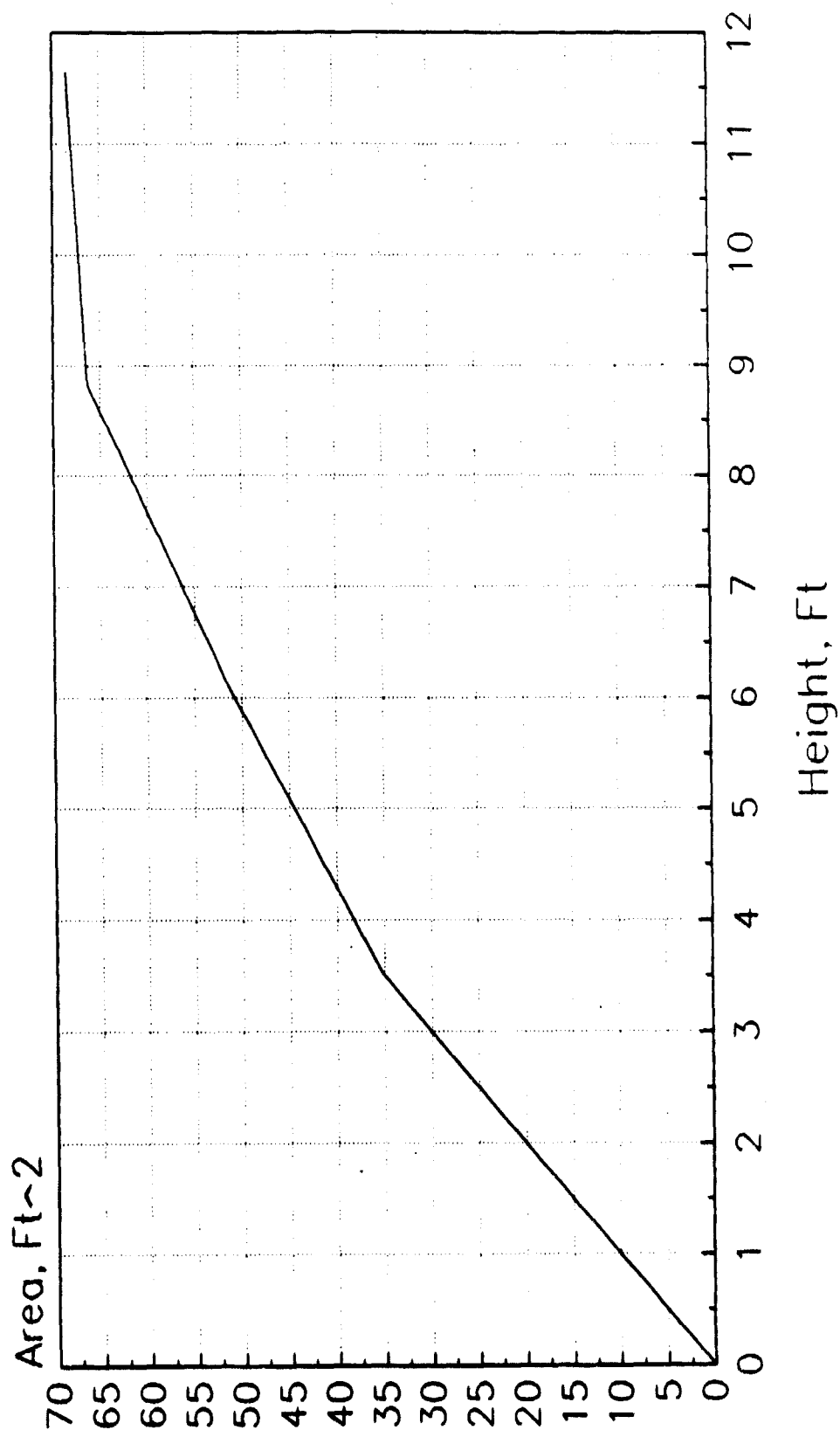
Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                   England 10

# Keel Type Auto CO2 Bell, Light

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Keel Type Lighted Gas

Country of Use: England

Function: Acetylene gas buoy, with cage type  
daymark superstructure, and AGA LIHA 600  
electric fog signal.

Moderate water depth.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 13,654 Lbs.

Buoy Draft: 11.50 Ft.

Overall Buoy Length: 21.75 Ft.

Focal Height of Light: 7.40 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: 2xElect.batt.packs, 2xAcet.cyl.  
Lighting Equipment: 200mm Acetylene lantern  
Sound Equipment: AGA LIHA 600 elect. fog signal  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 5.6 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:  
    Has free flooding keel for water ballast.

General Notes

    Radar reflector is omnidirectional.

Manufacturers:

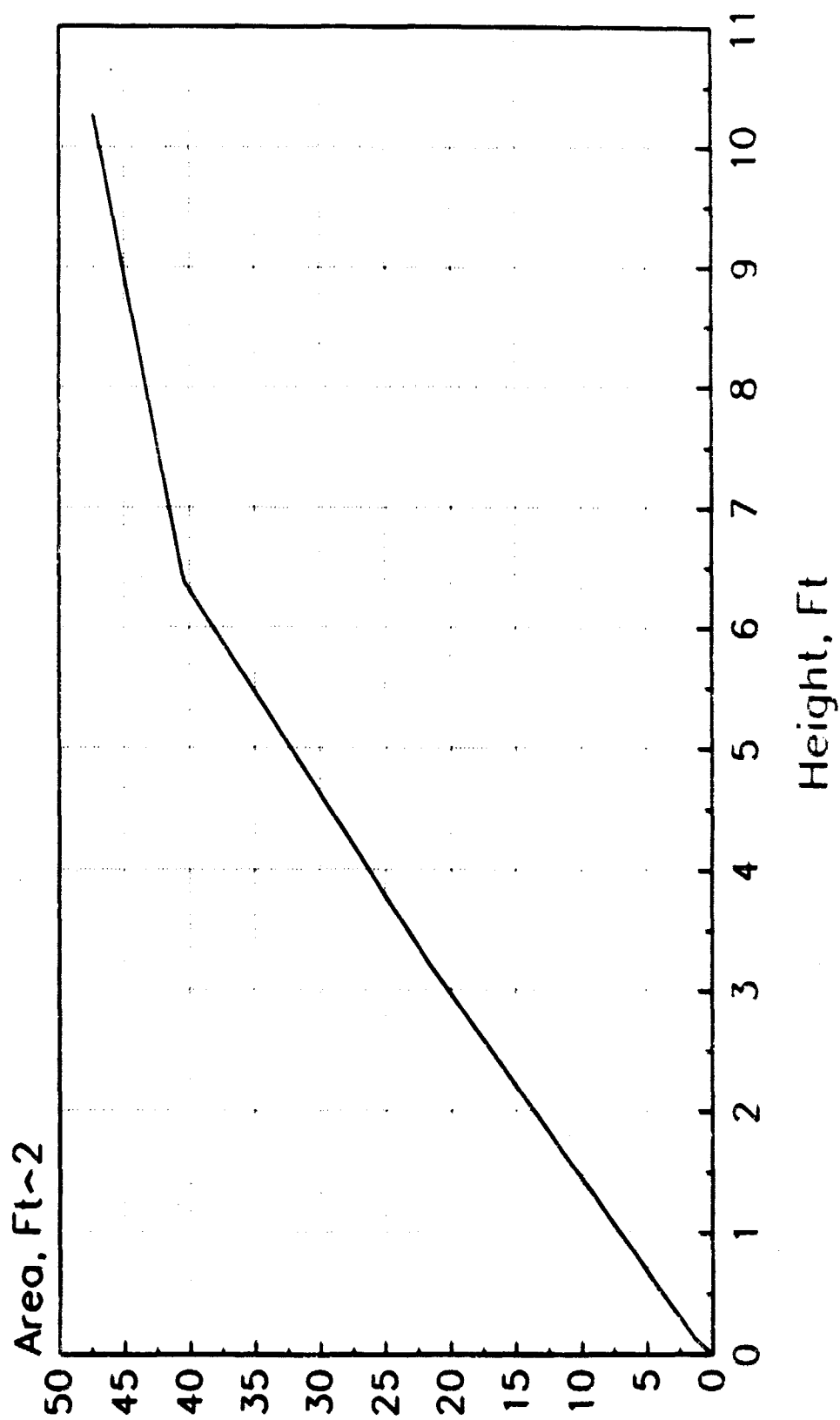
Source of Design:                    Trinity House

Drawing Reference:                    England 8



# Keel Type Lighted Gas

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Lighted Vessel Watch

Country of Use: England

Function: Standard unlighted buoy, small type.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,625 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 8.25 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 6.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: CAN

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                          Trinity House

Drawing Reference:                          England 10

## GENERAL INFORMATION

Name of Buoy: Short Pillar Lighted Acetylene

Country of Use: England

Function: Acetylene lantern on short pillar  
trestle, alternately fitted with radar  
reflector and topmark, or lantern and  
topmark.

Moderate to shallow water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,047 Lbs.

Buoy Draft: 4.90 Ft.

Overall Buoy Length: 19.25 Ft.

Focal Height of Light: 13.50 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: A130 Acetylene cylinders  
Lighting Equipment: 200mm Acetylene lantern  
Sound Equipment: none  
Other Payload: Optional radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Optional Cardinal  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:  
    Has free flooding lower chamber (keel) for water ballast.

General Notes

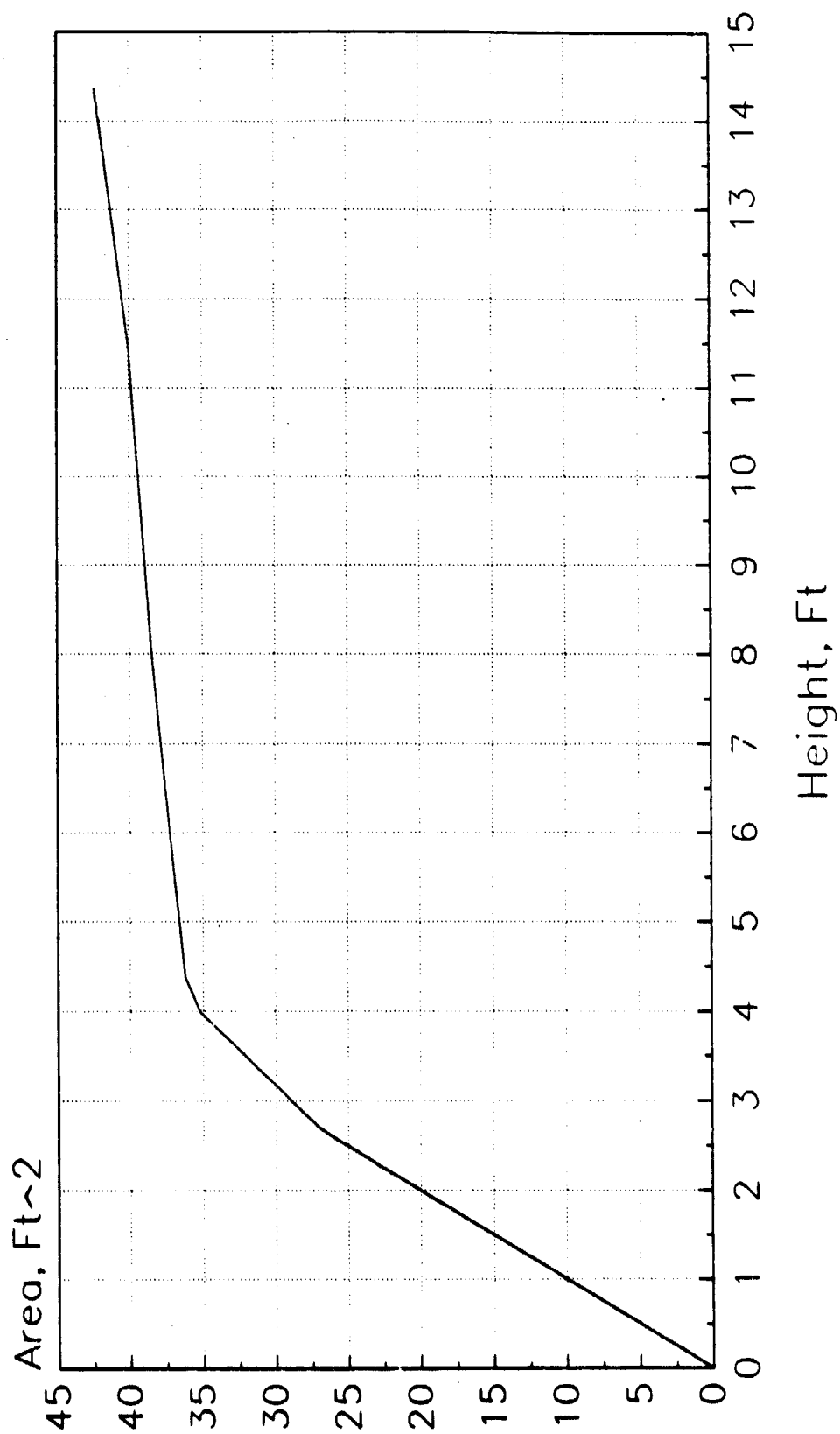
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 6

# Short Pillar Lighted Acetylene

Cumulative Area \_\_\_\_\_





## GENERAL INFORMATION

Name of Buoy: Small Electric Lighted, "Bury"

Country of Use: England

Function: Electric lantern, with wing daymark  
superstructure.

For shallow water, grounding at low  
tide. Has chisel point bottom.

Date Of Last Update For This Record: 11/09/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,565 Lbs.

Buoy Draft: 5.90 Ft.

Overall Buoy Length: 13.63 Ft.

Focal Height of Light: 6.90 Ft.

Buoy Beam or Diameter: 5.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 105 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Conical bel WL, Cyl

Counterweight Type: External

RELATED EQUIPMENT

Number of Power Sources: 12  
Type of Power Sources: 2 Battery pockets (6 in each)  
Lighting Equipment: "Stone Chance" 200mm Lantern  
Sound Equipment: None  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 5.5 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 7 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                 Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Chisel point on ballast weight to anchor on grounding.

Stability Notes:

General Notes

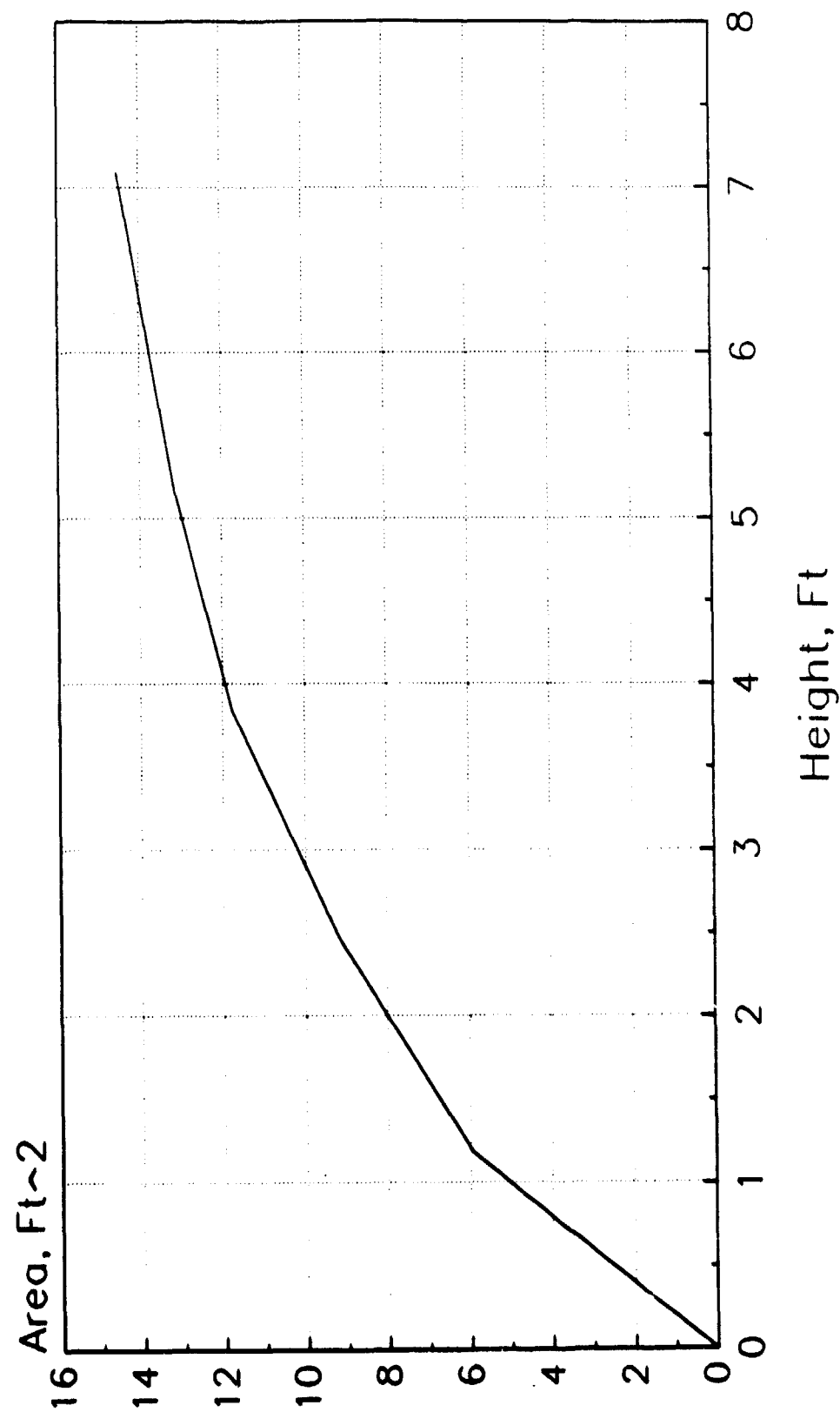
Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 13

# Small Electric Lighted, "Bury"

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Special Can

Country of Use: England

Function: Standard unlighted buoy, small type,  
river exe.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 869 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 6.33 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.75 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response:

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., mid section

Hull Type: CAN top, conical bot.

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM, Rivers  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                    Trinity House

Drawing Reference:                    England 16

## GENERAL INFORMATION

Name of Buoy: Spherical Mooring

Country of Use: England

Function: Standard unlighted buoy, small type.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,120 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 5.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.50 Ft.

Freeboard:        No Mooring: 0.00 Ft.  
                     Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
                         Hull Filling :  
                         Tower :  
                         Topmark :  
                         Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Spherical

Counterweight Type:



## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: None  
Lighting Equipment: None  
Sound Equipment: None  
Other Payload: None  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: None  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design: Trinity House

Drawing Reference: England 16

## GENERAL INFORMATION

Name of Buoy: Spherical Top

Country of Use: England

Function: Standard unlighted buoy, small type,  
river exe.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 811 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 7.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.75 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., mid section

Hull Type: Conical Bottom

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM, Rivers  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                               0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                           England 16

## GENERAL INFORMATION

Name of Buoy: Standard GRP 3 Meter Lighted.

Country of Use: England

Function: Lighted gas buoy, cage type  
superstructure.

Moderate to shallow water.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,300 Lbs.

Buoy Draft: 3.30 Ft.

Overall Buoy Length: 15.09 Ft.

Focal Height of Light: 9.20 Ft.

Buoy Beam or Diameter: 9.82 Ft.

Freeboard: No Mooring: 2.10 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 9  
Type of Power Sources: AL 21 Acetylene cylinders  
Lighting Equipment: 200mm Acetylene lantern  
Sound Equipment: None  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.0 Nmi.  
Radar Range: 5.7 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

## Special Features:

Has marine grade rubber fender.

## Stability Notes:

## General Notes

This buoy can alternately be fitted by Balmoral with pillar or batwing daymarks, various topmarks, and an electric beacon with primary or solar powered batteries. Radar reflector is omnidirectional.

Manufacturers:                    Balmoral Group Ltd.

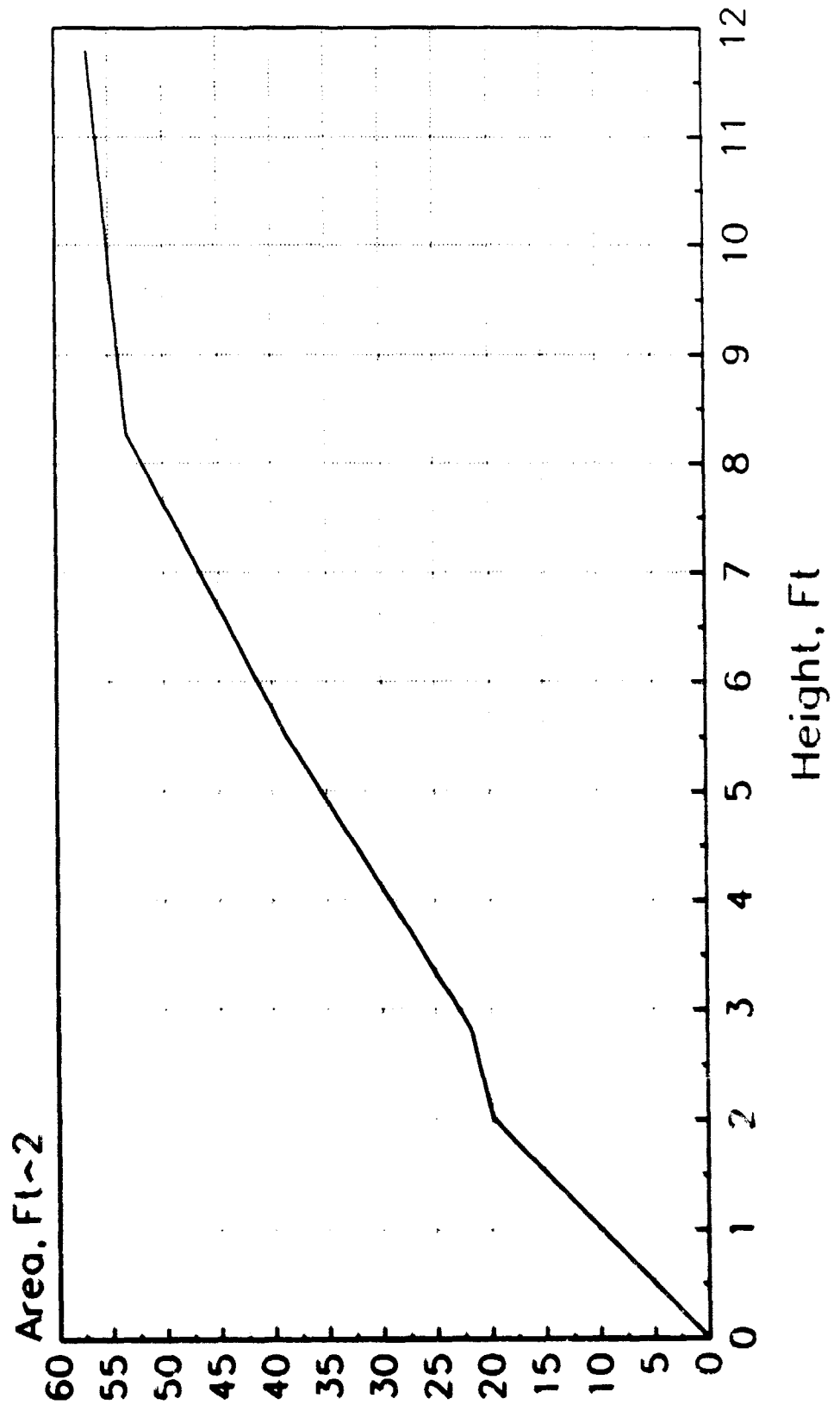
Source of Design:                Trinity House

Drawing Reference:                England 11



# Standard GRP 3 Meter Lighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Std 4 Pocket Lighted Acetylene

Country of Use: England

Function: Lighted acetylene gas buoy with cage type daymark superstructure. Can alternately be fitted with trestle superstructure with batwing daymarks and or wave actuated bell. Moderate to shallow draft.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,425 Lbs.

Buoy Draft: 4.80 Ft.

Overall Buoy Length: 17.50 Ft.

Focal Height of Light: 11.20 Ft.

Buoy Beam or Diameter: 10.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 419 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: A120 Acetylene cylinders  
Lighting Equipment: 200mm Acetylene lantern  
Sound Equipment: Optional motion actuated bell  
Other Payload: Optional radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 3.0 Nmi.  
Radar Range: 5.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

Has free flooding lower chamber (keel) for water ballast.

General Notes

Radar reflector is omnidirectional.

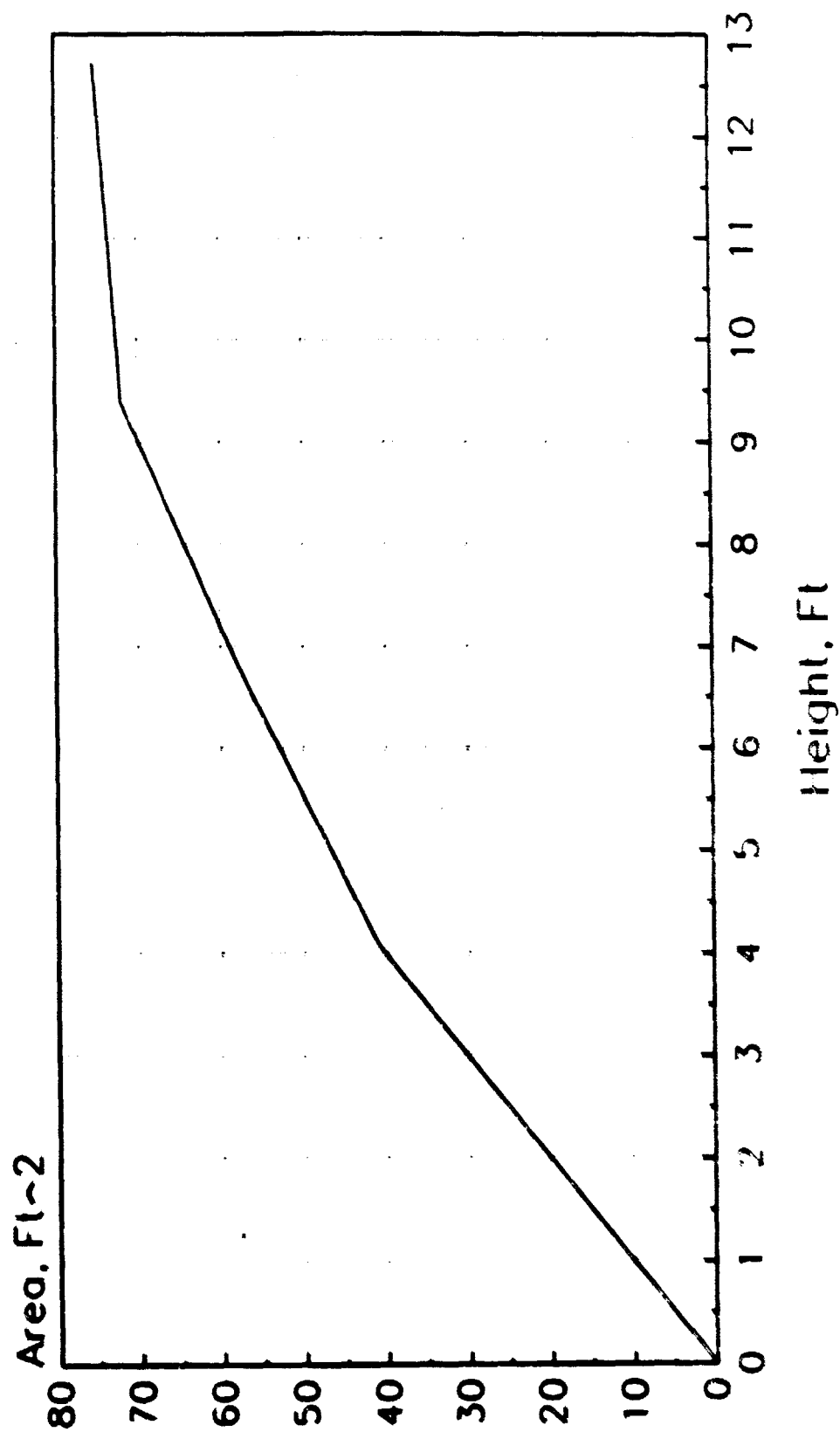
Manufacturers:

Source of Design:                          Trinity House

Drawing Reference:                          England 9

# Std 4 Pocket Lighted Acetylene

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Wreck/Nun

Country of Use: England

Function: Standard unlighted buoy, small type,  
river exe.

Date Of Last Update For This Record: 07/21/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 615 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 7.17 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.83 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Horiz., Mid Section

Hull Type: NUN

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Lidle Size: Chain Size. 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM, Rivers  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Manufacturers:

Source of Design:                            Trinity House

Drawing Reference:                            England 16



## GENERAL INFORMATION

Name of Buoy: 950 Series Marker (3.1x5.8 L)  
Country of Use: England MFG 1  
Function: Lighted inshore buoy, with lateral  
daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	425 Lbs.
Buoy Draft:	2.00 Ft.
Overall Buoy Length:	5.79 Ft.
Focal Height of Light:	3.48 Ft.
Buoy Beam or Diameter:	3.11 Ft.
Freeboard:	No Mooring: 0.30 Ft. Minimum: 0.00 Ft.
Pounds Per Inch Immersion:	41 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Fiberglass GRP Hull Filling : Baltec Foam Tower : Fiberglass GRP Topmark : Counterweight:
Coating/Coloring System:	Moulded-in color, IALA system
Subdivision:	Foam filled
Hull Type:	Cylindrical
Counterweight Type:	Internal

RELATED EQUIPMENT

Number of Power Sources: 3  
Type of Power Sources: Balmoral PB1 Dry cell 4.5v40Ah  
Lighting Equipment: 40mm electric lantern  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: none  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water  
Nominal Visual Range of Daymark: 1.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 2 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:  
                 Buoy includes rubber fender.

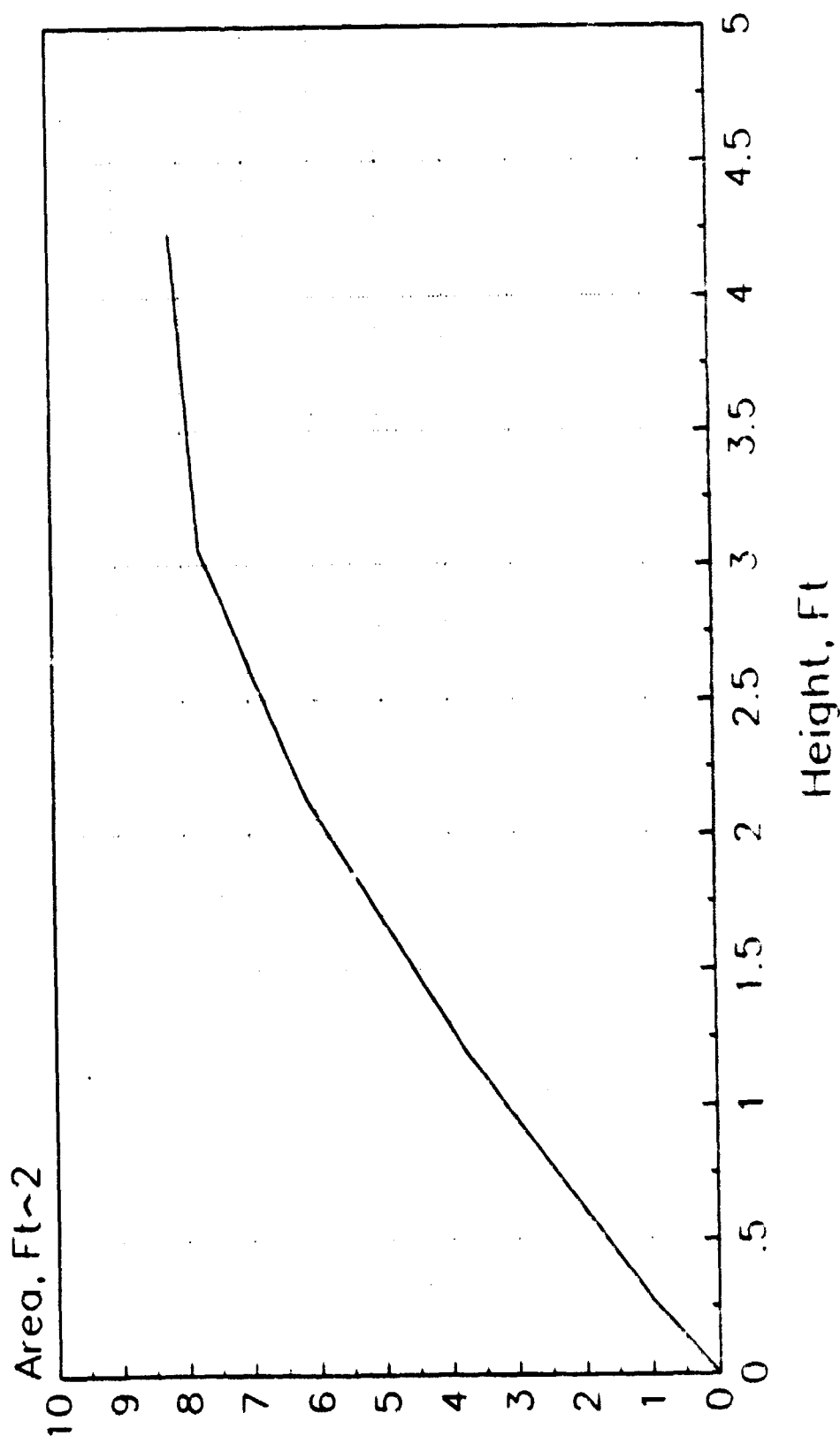
Stability Notes:

General Notes

Manufacturers:                            Balmoral Group Ltd.  
Source of Design:                           Balmoral Group Ltd.  
Drawing Reference:                           England MFG 1-1&1-15

# 950 Series Marker (3.1x5.8 L)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF120L Marker Buoy (3.9x9 L)

Country of Use: England MFG 1

Function: Lighted inshore buoy, used by fish farmers, small ports and marinas with Can or Conical daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 333 Lbs.

Buoy Draft: 3.39 Ft.

Overall Buoy Length: 9.15 Ft.

Focal Height of Light: 4.98 Ft.

Buoy Beam or Diameter: 3.94 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 65 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark :  
Counterweight: Electric battery

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Internal tail tube

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Balmoral DB3 Battery 12v 120ah  
Lighting Equipment: 85mm Electric Lantern  
Sound Equipment: Optional Wave Actuated Bell  
Other Payload: Optional Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: None  
Number of Padeyes: 1

OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water  
Nominal Visual Range of Daymark: 1.3 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 4 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Service period for battery (depending on light power) is 32  
days (20w) to 318 days (2w).

Special Features:

Single mooring eye at bottom of tail tube.  
Elastomer coating is highly abrasion resistant.

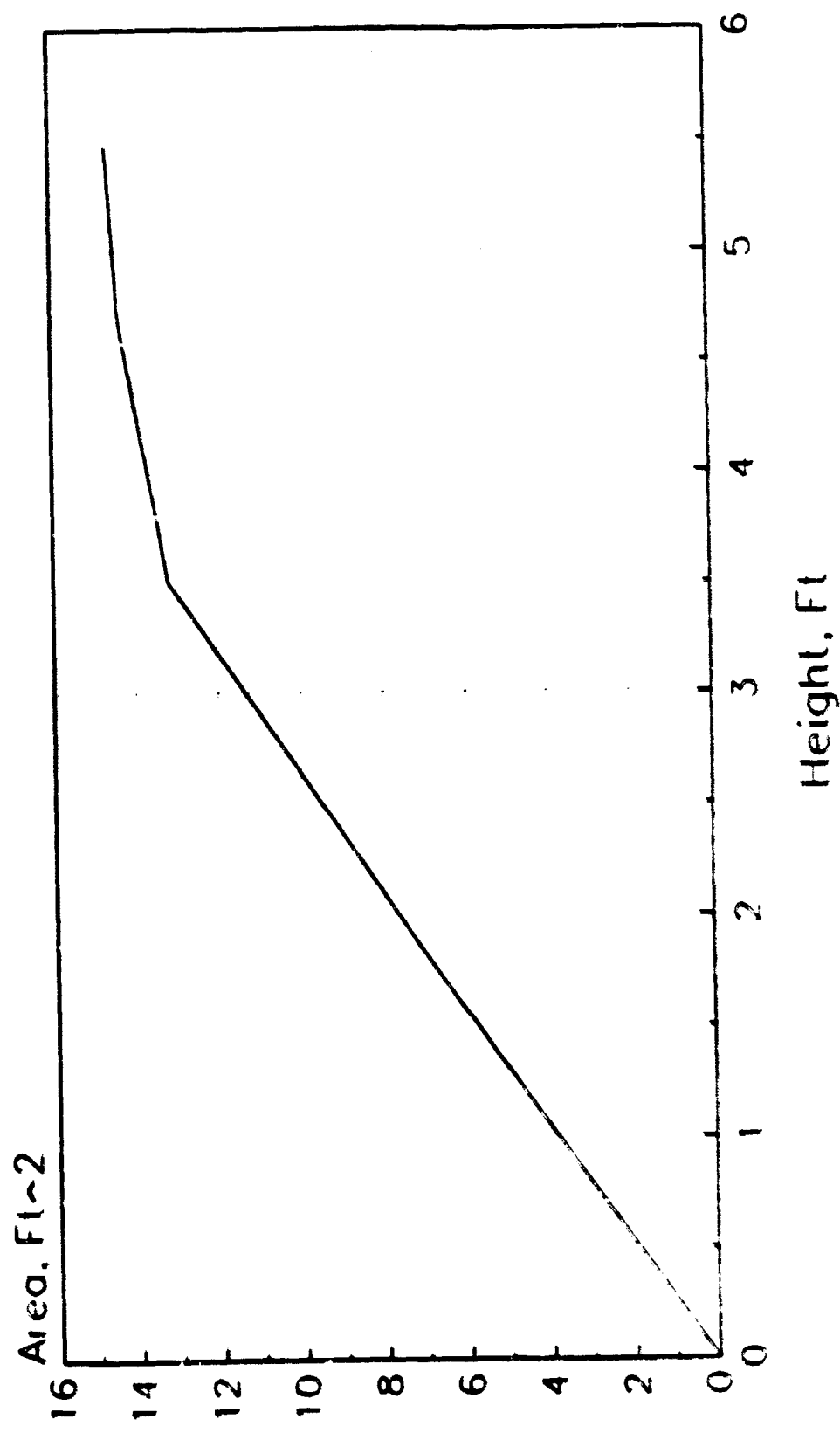
Stability Notes:

General Notes

Manufacturers:                            Balmoral Group Ltd.  
Source of Design:                        Balmoral Group Ltd.  
Drawing Reference:                        England MFG 1-1a 1-2

# EF120L Marker Buoy (3.9x9 L)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: EF15L Class V (4.9x10 LR)

Country of Use: England MFG 1

Function: Lighted inshore buoy, with Can or  
Conical daymark, for use in small ports.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,709 Lbs.

Buoy Draft: 3.83 Ft.

Overall Buoy Length: 10.10 Ft.

Focal Height of Light: 5.79 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 1.42 Ft.  
Minimum: 0.84 Ft.

Pounds Per Inch Immersion: 102 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 1,019 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ballast skirt

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Balmoral Solargen pack ●  
Lighting Equipment: 85mm electric lantern  
Sound Equipment: Optional wave actuated bell  
Other Payload: Radar reflector ●  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In. ●  
Type: Steel chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Optional special  
Number of Padeyes: 2 ●

OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water  
Nominal Visual Range of Daymark: 2.0 Nmi. ●  
Radar Range: 2.6 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 4 Ft. ●  
Maximum: 0 Ft.  
Reflective Material Type: ●

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Single and bridle mooring eyes.  
Elastomer coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

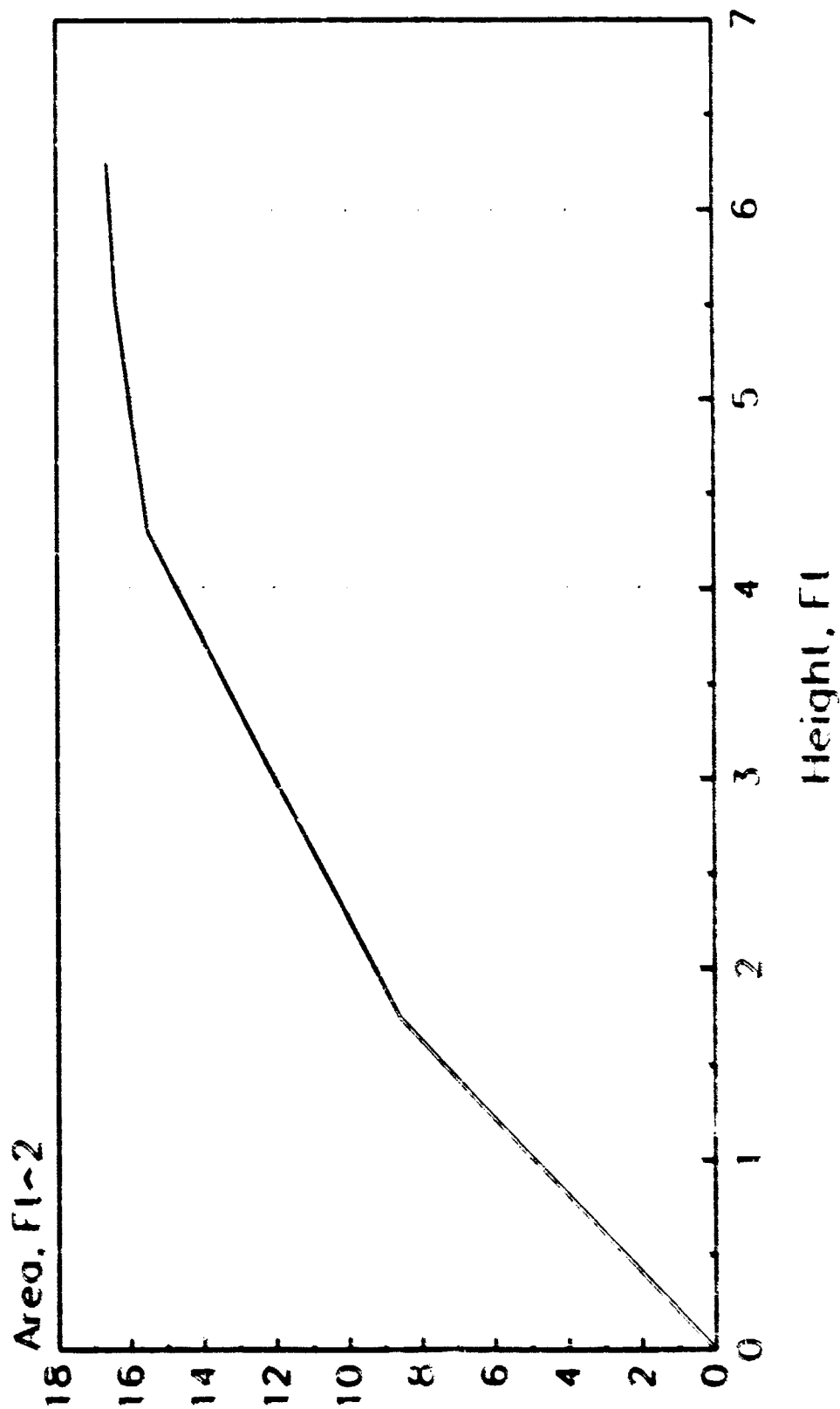
Manufacturers:                                Balmoral Group Ltd.

Source of Design:                             Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-1& 1-3

# EF15L Class V (4.9x10 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF15P Class V (4.9x14 LR)

Country of Use: England MFG 1

Function: Lighted inshore buoy, with pillar  
daymark, for use in small ports.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,709 lbs.

Buoy Draft: 3.83 Ft.

Overall Buoy Length: 14.44 Ft.

Focal Height of Light: 5.95 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 1.42 Ft.  
Minimum: 0.84 Ft.

Pounds Per Inch Immersion: 102 lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 1,019 lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ballast skirt

RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 1.9 Nmi.

Radar Range: 2.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 4 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:            Replacement:     \$0  
                 Preparation:     \$0  
         Monthly Servicing:     \$0

Service Life:                   0.0 Yrs.

Maintenance Interval:           0 Mos.

Maintenance Notes:

## Special Features:

Single and bridle mooring eyes.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

## General Notes

Radar reflector is omnidirectional.

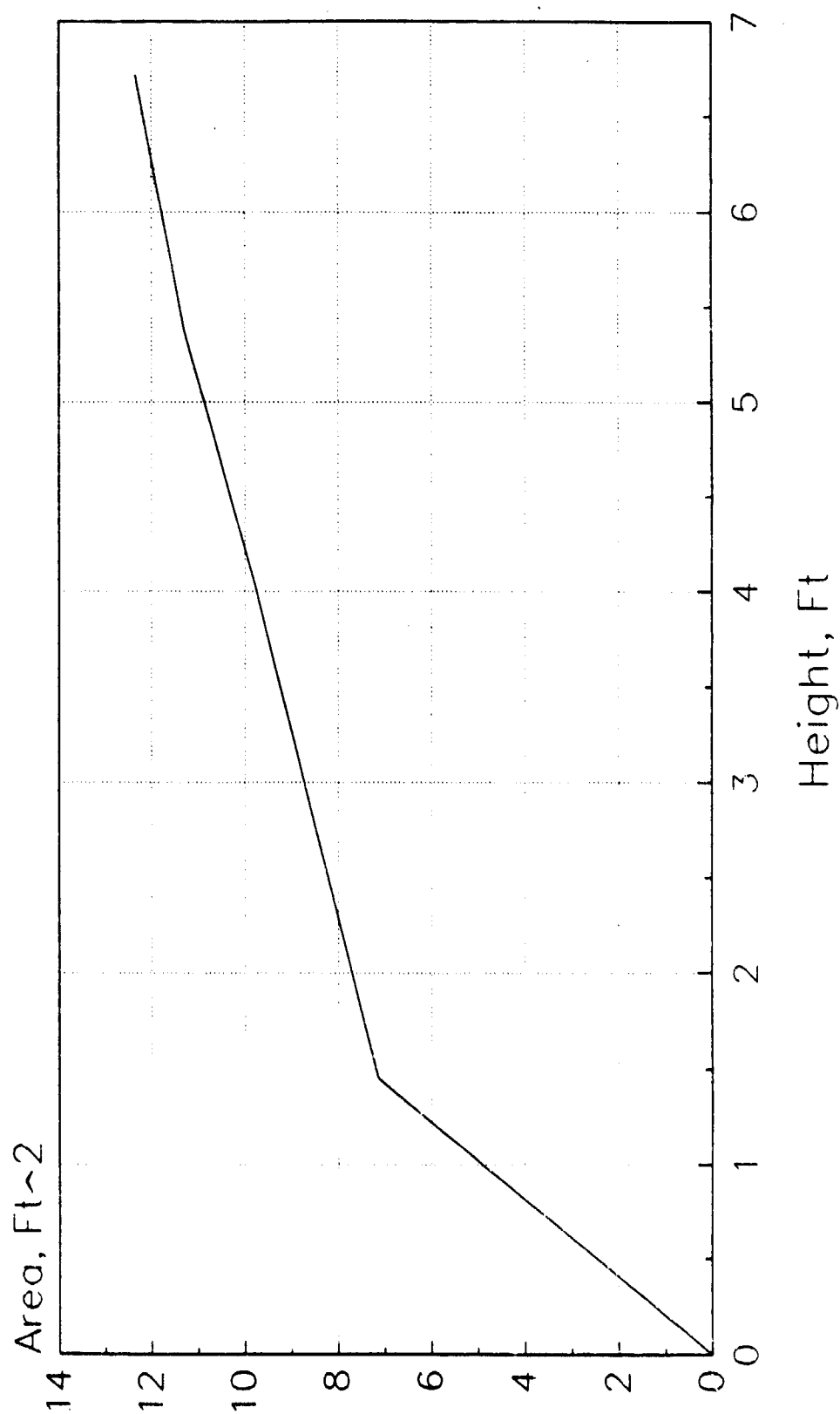
Manufacturers:                   Balmoral Group Ltd.

Source of Design:                Balmoral Group Ltd.

Drawing Reference:               England MFG 1-1&1-4

# EF15P Class V (4.9x14 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: EF18L Class IV (5.9x13 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with can or conical  
daymark, for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,966 Lbs.

Buoy Draft: 4.96 Ft.

Overall Buoy Length: 13.12 Ft.

Focal Height of Light: 7.58 Ft.

Buoy Beam or Diameter: 5.91 Ft.

Freeboard: No Mooring: 1.93 Ft.  
Minimum: 1.28 Ft.

Pounds Per Inch Immersion: 146 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 2,240 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional Wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.2 Nmi.

Radar Range: 2.8 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Single and bridle mooring eyes.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Buoy weight includes battery pack.

Radar reflector is omnidirectional.

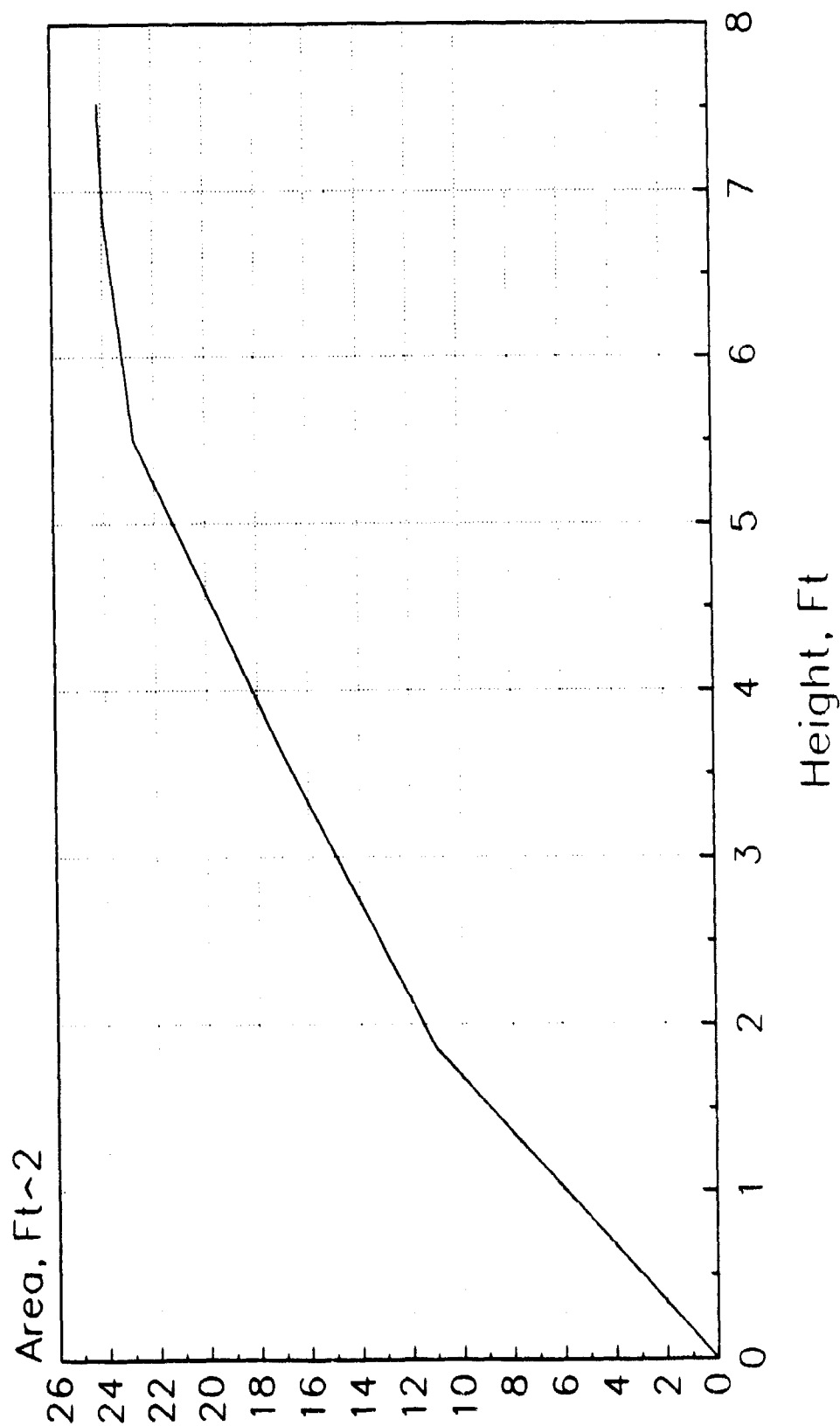
Manufacturers:                    Balmoral Group Ltd.

Source of Design:                Balmoral Group Ltd.

Drawing Reference:                England MFG 1-1&1-5

# EF18L Class IV (5.9x13 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF18P Class IV (5.9x18 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with pillar daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,032 Lbs.

Buoy Draft: 5.00 Ft.

Overall Buoy Length: 18.27 Ft.

Focal Height of Light: 7.60 Ft.

Buoy Beam or Diameter: 5.91 Ft.

Freeboard: No Mooring: 1.89 Ft.  
Minimum: 1.24 Ft.

Pounds Per Inch Immersion: 146 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 2,180 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ballast skirt

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Balmoral Solargen pack  
Lighting Equipment: 85mm electric lantern  
Sound Equipment: Optional wave actuated bell  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal or Lateral  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water  
Nominal Visual Range of Daymark: 2.0 Nmi.  
Radar Range: 2.7 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Single and bridle mooring eyes. Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

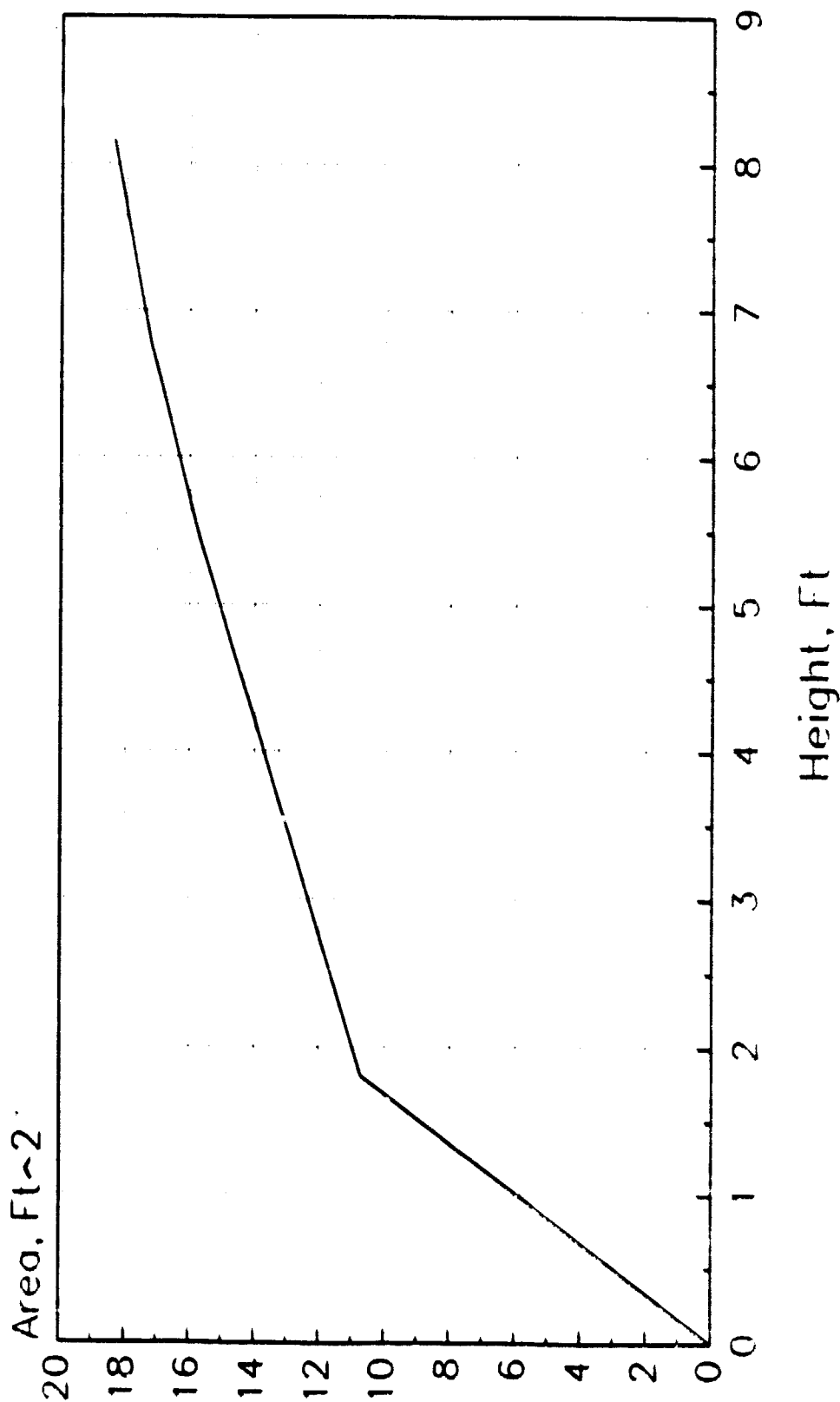
Manufacturers:                            Balmoral Group Ltd.

Source of Design:                           Balmoral Group Ltd.

Drawing Reference:                           England MFG 1-1&1-6

# EF18P Class IV (5.9x18 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: EF20L (6.5x13 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with lateral daymark,  
for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,583 Lbs.

Buoy Draft: 5.09 Ft.

Overall Buoy Length: 13.35 Ft.

Focal Height of Light: 8.39 Ft.

Buoy Beam or Diameter: 6.56 Ft.

Freeboard: No Mooring: 1.80 Ft.  
Minimum: 1.26 Ft.

Pounds Per Inch Immersion: 181 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 2,740 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ballast Skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen Pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 2.9 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

## Special Features:

Single and bridle mooring eyes.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

## General Notes

Radar reflector is omnidirectional.

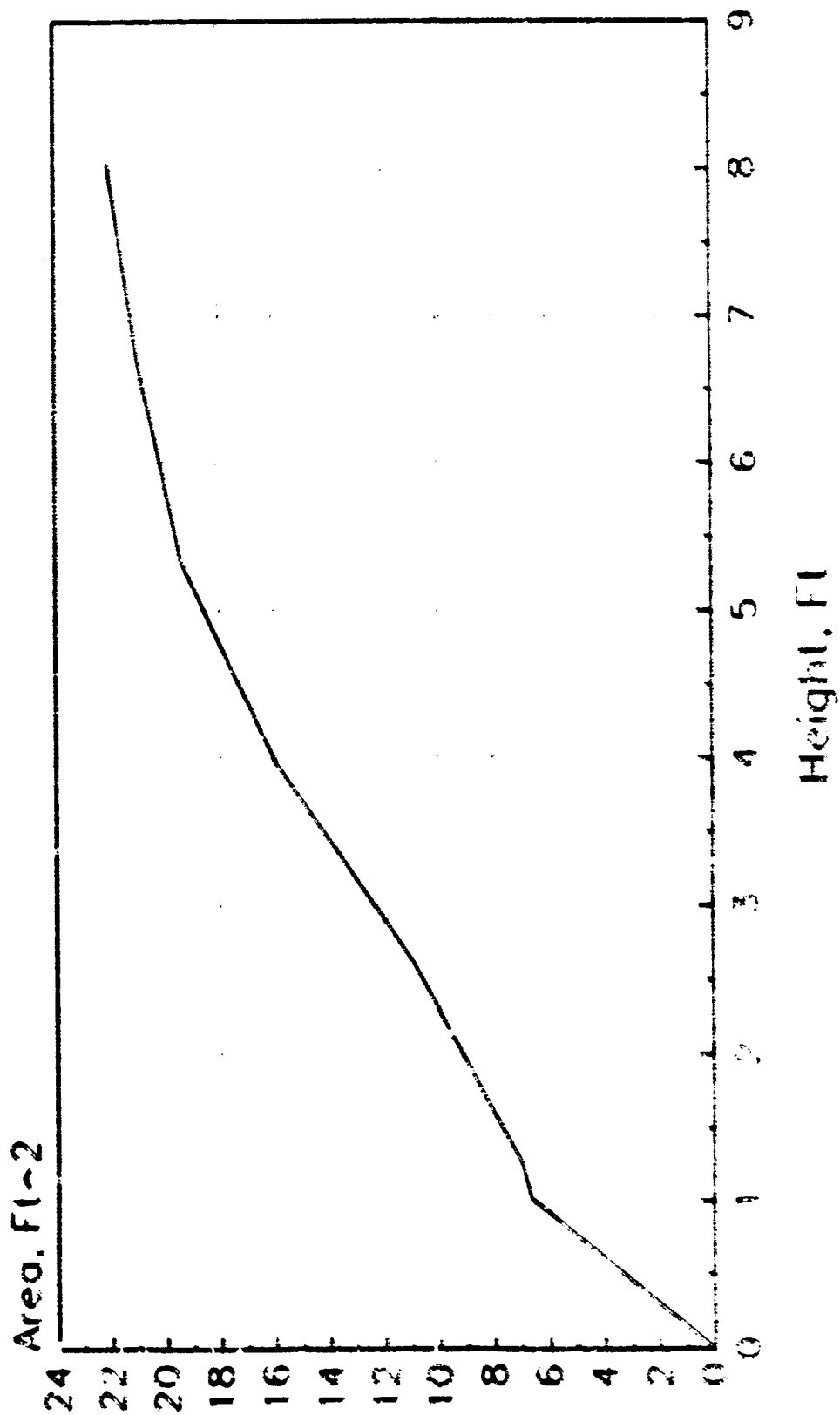
Manufacturers:                            Balmoral Group Ltd.

Source of Design:                           Balmoral Group Ltd.

Drawing Reference:                           England MFG 1-161-7

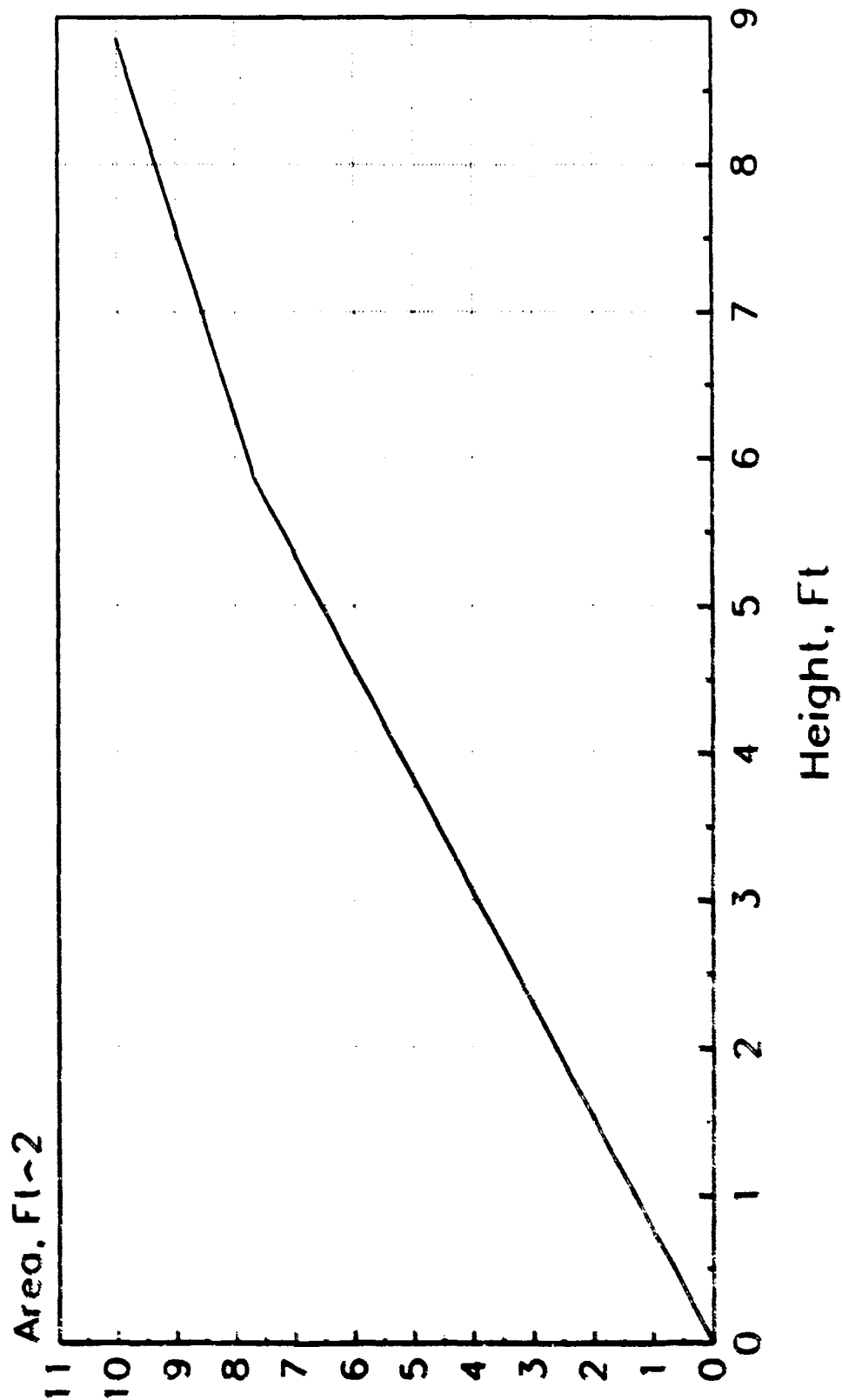
# EF20L (6.6x13 LR)

Cumulative Area



# SG2 Spar (1.3x20 LRS)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF20P (6.6x18 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with pillar daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,583 Lbs.

Buoy Draft: 5.09 Ft.

Overall Buoy Length: 18.37 Ft.

Focal Height of Light: 8.40 Ft.

Buoy Beam or Diameter: 6.56 Ft.

Freeboard: No Mooring: 1.80 Ft.  
Minimum: 1.26 Ft.

Pounds Per Inch Immersion: 181 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 2,740 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane, elastomer  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Latexl

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 2.8 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

## Maintenance Notes:

Elastomer hull coating is highly abrasion resistant.

## Special Features:

Single and bridle mooring eyes.

## Stability Notes:

## General Notes

Radar reflector is omnidirectional.

Manufacturers:                            Balmoral Group Ltd.

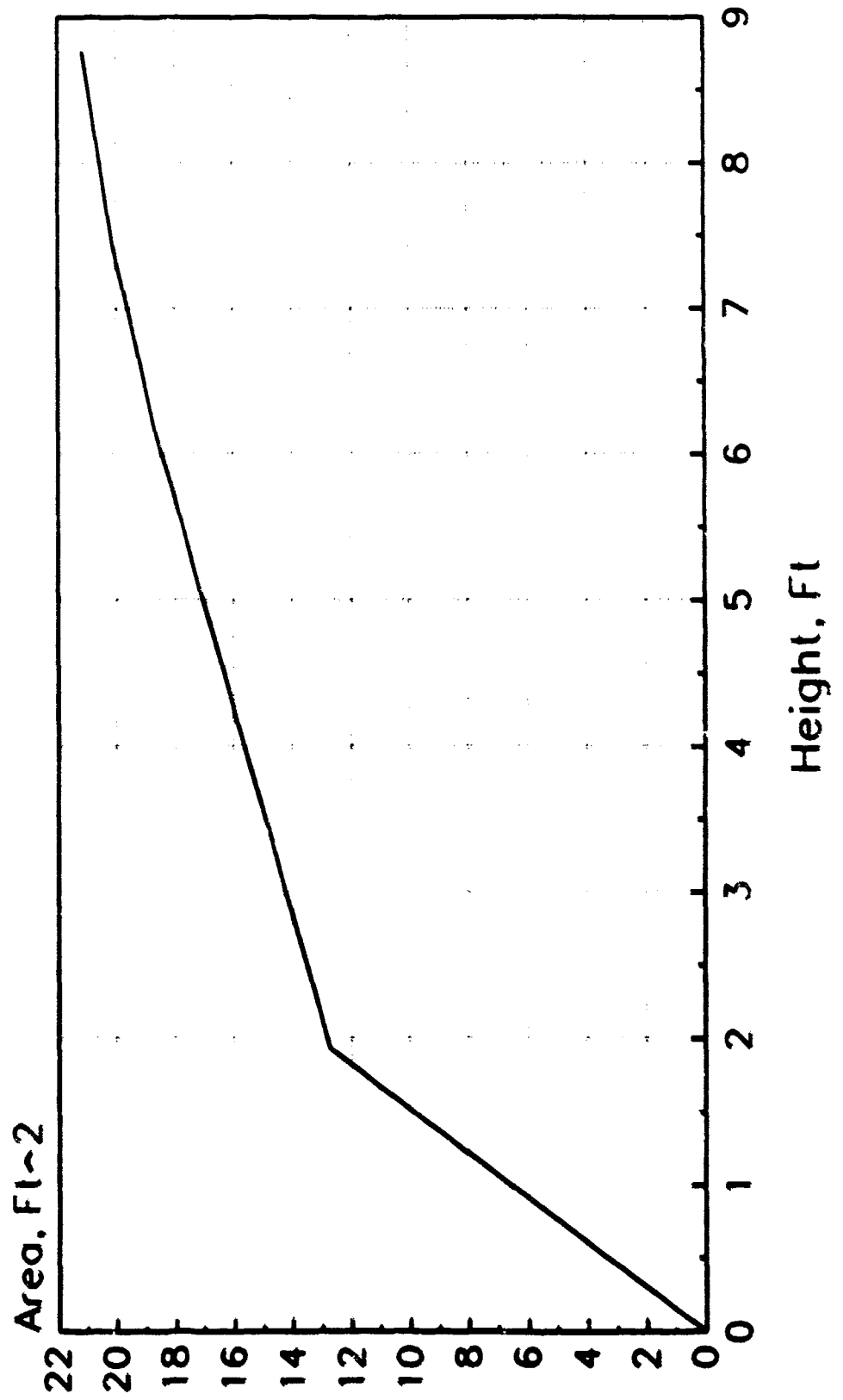
Source of Design:                            Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-1& 1-8



# EF20P (6.6x18 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF25L Class III (8.2x16 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with lateral daymark, for  
semi-exposed location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,324 Lbs.

Buoy Draft: 7.04 Ft.

Overall Buoy Length: 16.47 Ft.

Focal Height of Light: 9.86 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 2.48 Ft.  
Minimum: 1.81 Ft.

Pounds Per Inch Immersion: 282 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 6,133 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ext. ballast skirt

### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

### OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.8 Nmi.

Radar Range: 3.1 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 8 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Single and bridle mooring eyes.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

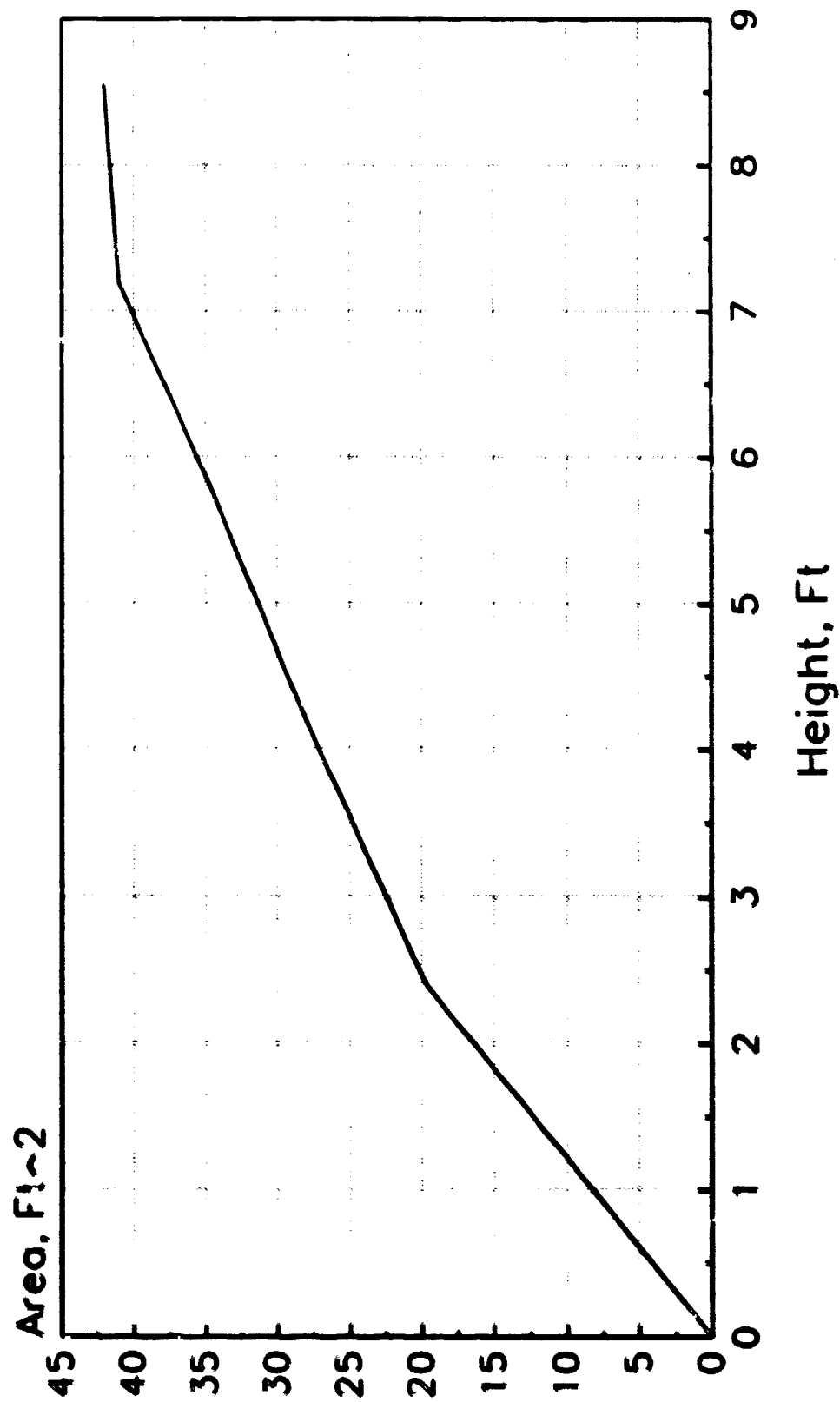
Manufacturers:                                Balmoral Group Ltd.

Source of Design:                             Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-161-9

# EF25L Class III (8.2x16 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF25P Class III (8.2x25 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with pillar daymark, for  
semi-exposed location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,103 Lbs.

Buoy Draft: 6.87 Ft.

Overall Buoy Length: 24.80 Ft.

Focal Height of Light: 11.50 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 2.64 Ft.  
Minimum: 1.97 Ft.

Pounds Per Inch Immersion: 282 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 6,688 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ext. ballast skirt

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Balmoral Solargen pack ●  
Lighting Equipment: 85mm electric lantern  
Sound Equipment: Optional wave actuated bell  
Other Payload: Radar reflector ●  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In. ●  
Type: Steel chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal or Lateral  
Number of Padeyes: 2 ●

OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 2.5 Nmi. ●  
Radar Range: 3.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 7 Ft. ●  
Maximum: 0 Ft.  
Reflective Material Type: ●

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Single and bridle mooring eyes.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:                            Balmoral Group Ltd.

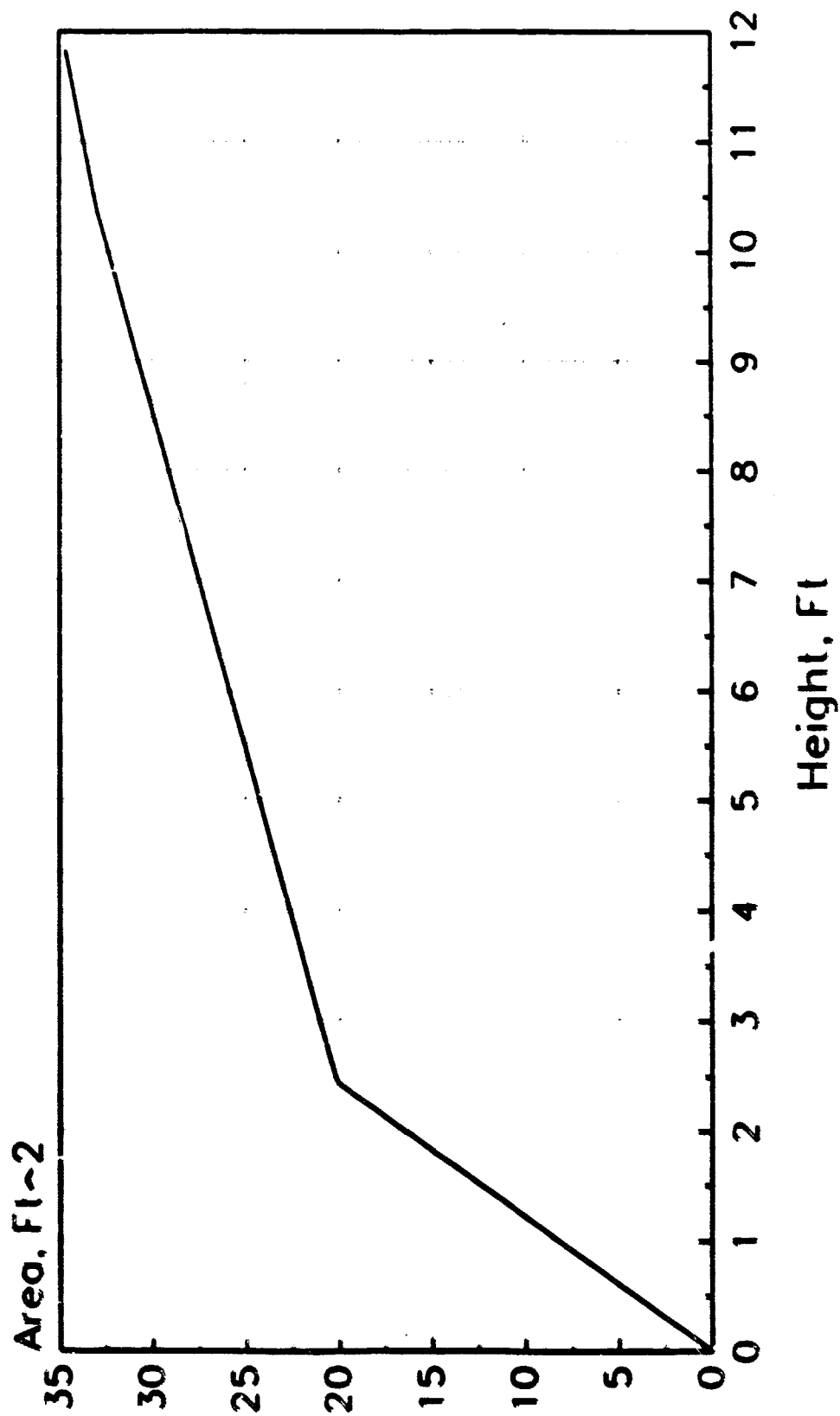
Source of Design:                            Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-161-10



# EF25P Class III (8.2X25 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF30L Class II (9.8x18 LR)  
Country of Use: England MFG 1  
Function: Lighted offshore buoy, with lateral  
daymark.

Date Of Last Update For This Record: 11/02/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	10,860 Lbs.
Buoy Draft:	8.75 Ft.
Overall Buoy Length:	18.41 Ft.
Focal Height of Light:	9.20 Ft.
Buoy Beam or Diameter:	9.84 Ft.
Freeboard:	No Mooring: 2.31 Ft. Minimum: 1.75 Ft.
Pounds Per Inch Immersion:	407 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	8,560 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Balthane elastomer Hull Filling : Baltec Foam Tower : Fiberglass GRP Topmark : Balthane elastomer Counterweight: Cast Iron
Coating/Coloring System:	Moulded-in color, IALA system
Subdivision:	Foam filled
Hull Type:	Cylind. hourglass
Counterweight Type:	Ext. ballast skirt

### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar Reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 3.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 9 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Single mooring eye.  
Elastomer hull coating is highly abrasion resistant.

Stability Notes:

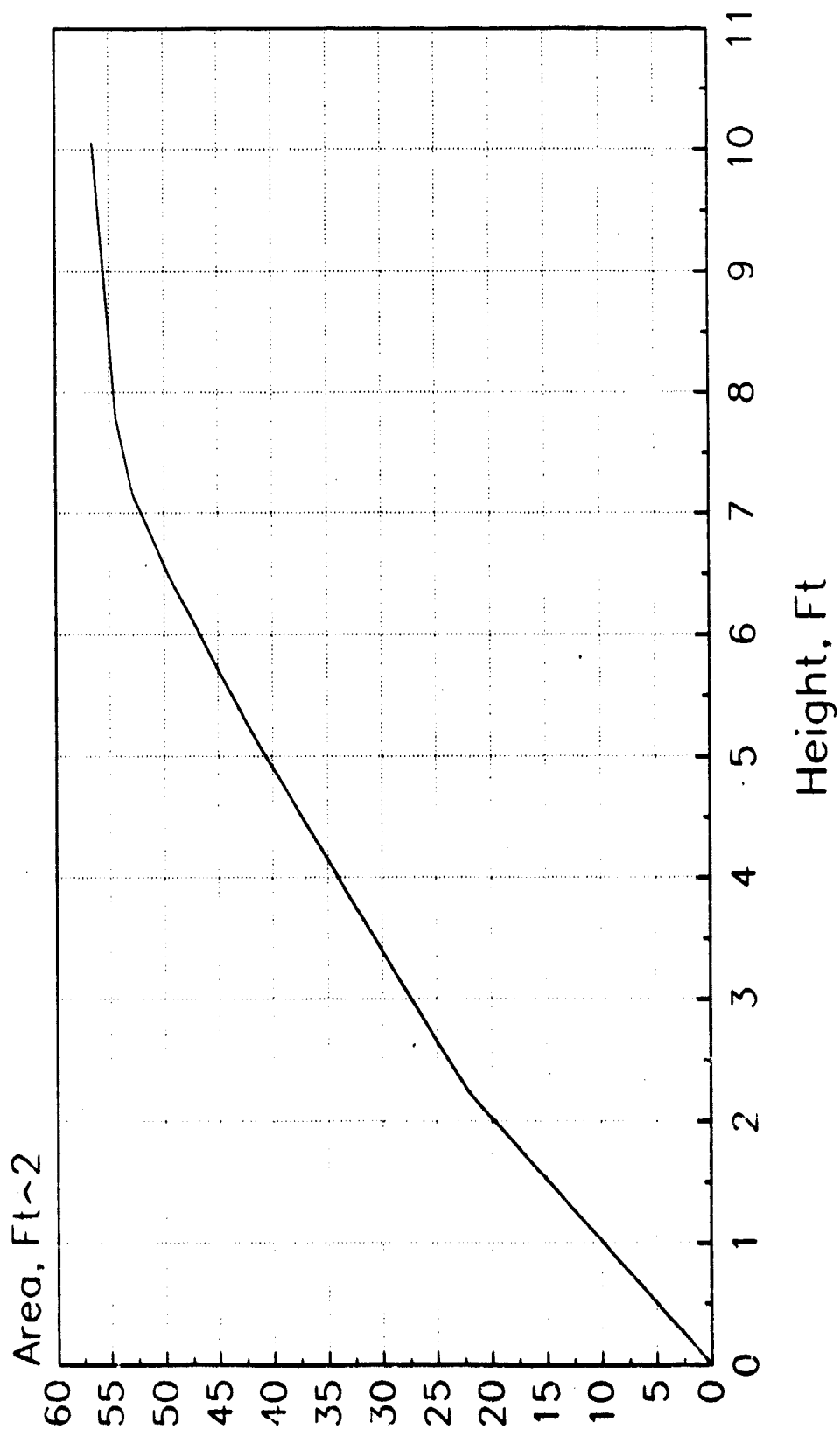
General Notes

Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.  
Source of Design:                              Balmoral Group Ltd.  
Drawing Reference:                              England MFG 1-1&1-11

# EF30L Class II (9.8x18 LR)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: EF30P Class II (9.8x27 LR)  
Country of Use: England MFG 1  
Function: Lighted offshore buoy, with pillar  
daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	9,860 Lbs.
Buoy Draft:	8.75 Ft.
Overall Buoy Length:	26.77 Ft.
Focal Height of Light:	11.17 Ft.
Buoy Beam or Diameter:	9.84 Ft.
Freeboard:	No Mooring: 2.31 Ft. Minimum: 1.55 Ft.
Pounds Per Inch Immersion:	407 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	7,567 Lbs.
Wave Motion Response:	Wave following
Construction Material:	Hull Shell : Balthane elastomer Hull Filling : Baltec Foam Tower : Fiberglass GRP Topmark : Balthane elastomer Counterweight: Cast Iron
Coating/Coloring System:	Moulded-in color, IALA system
Subdivision:	Foam filled
Hull Type:	Cylind. hourglass
Counterweight Type:	Ext. Ballast Skirt

### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 3.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 9 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Single mooring eye.

Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:                    Balmoral Group Ltd.

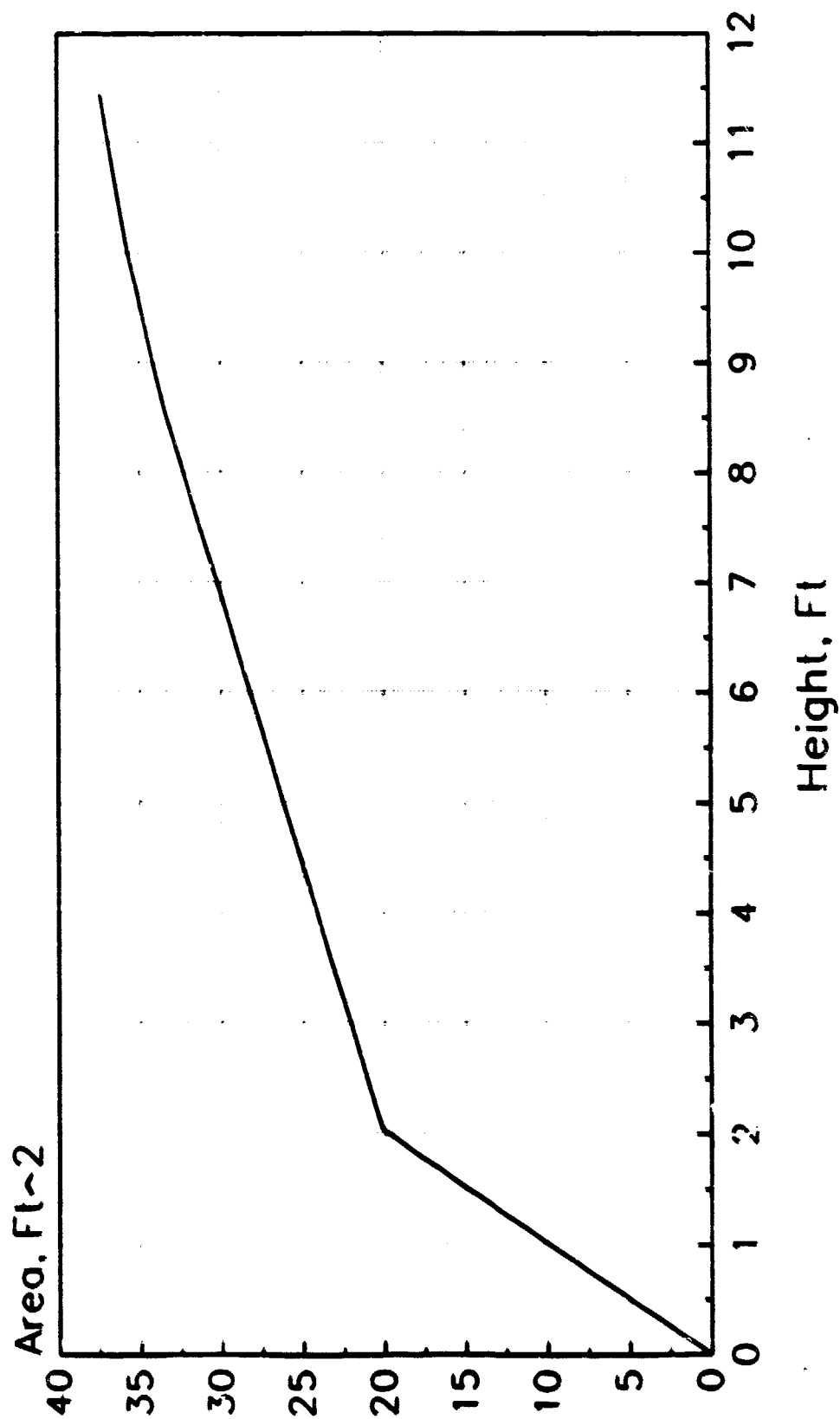
Source of Design:                Balmoral Group Ltd.

Drawing Reference:               England MFG 1-1&1-12



# EF30P Class II (9.8x27 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF36L Class I (11.8x18 LR)

Country of Use: England MFG 1

Function: Lighted offshore buoy, with lateral daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 12,290 Lbs.

Buoy Draft: 4.91 Ft.

Overall Buoy Length: 18.37 Ft.

Focal Height of Light: 13.13 Ft.

Buoy Beam or Diameter: 11.81 Ft.

Freeboard: No Mooring: 2.30 Ft.  
Minimum: 2.01 Ft.

Pounds Per Inch Immersion: 585 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 14,135 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec Foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ext. ballast skirt

### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.4 Nmi.

Radar Range: 3.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:         \$0  
                     Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:  
                     Elastomer hull coating is highly abrasion resistant.

Stability Notes:

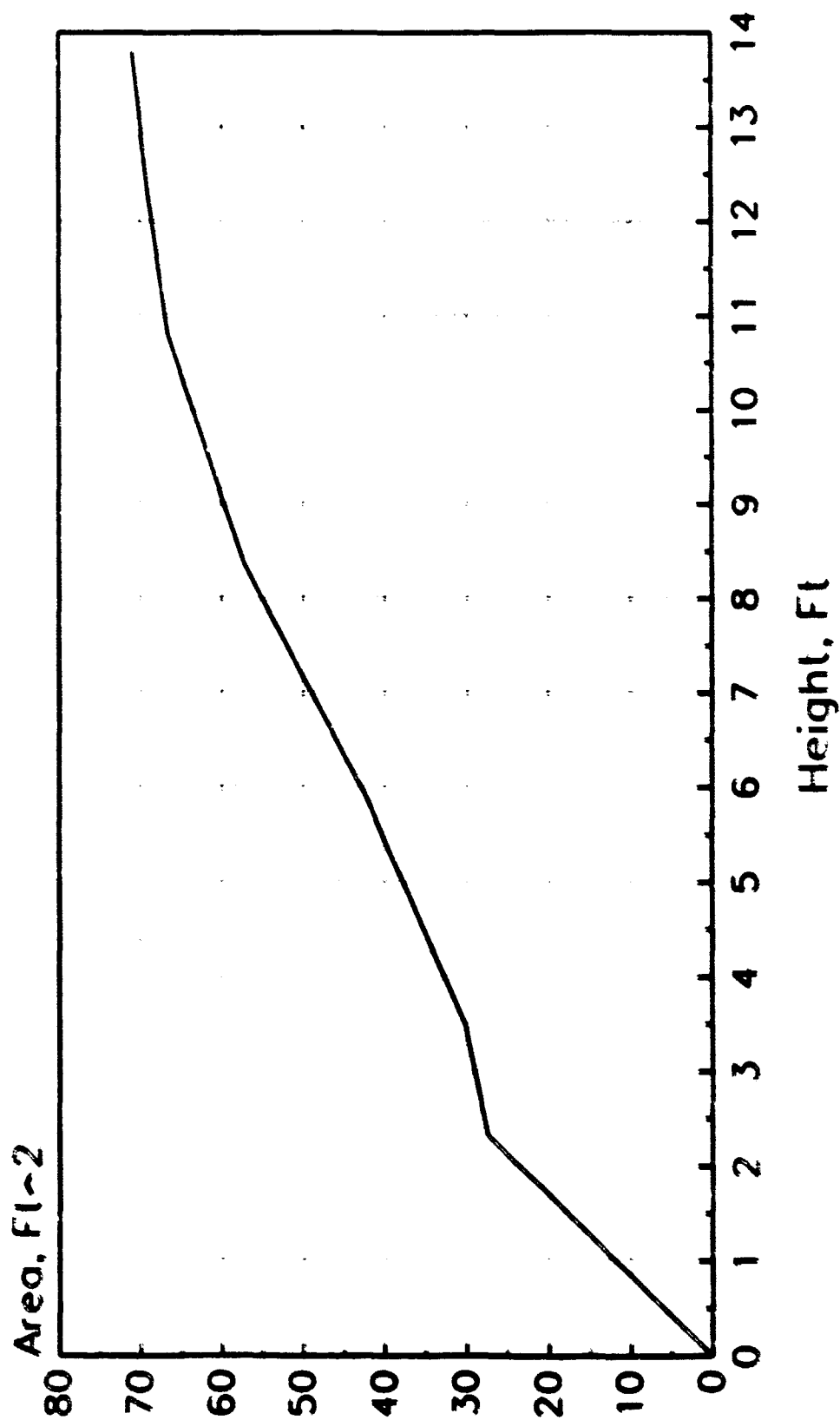
General Notes

                     Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.  
Source of Design:                               Balmoral Group Ltd.  
Drawing Reference:                               England MFG 1-161-13

# EF36L Class I (11.8x18 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: EF36P Class I (11.8x27 LR)

Country of Use: England MFG 1

Function: Lighted offshore buoy, with pillar  
daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 12,070 Lbs.

Buoy Draft: 4.91 Ft.

Overall Buoy Length: 26.57 Ft.

Focal Height of Light: 18.37 Ft.

Buoy Beam or Diameter: 11.81 Ft.

Freeboard: No Mooring: 2.30 Ft.  
Minimum: 2.01 Ft.

Pounds Per Inch Immersion: 585 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 14,135 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Balthane elastomer  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: Ext. ballast skirt

### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

### OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 3.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Elastomer hull coating is highly abrasion resistant.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.

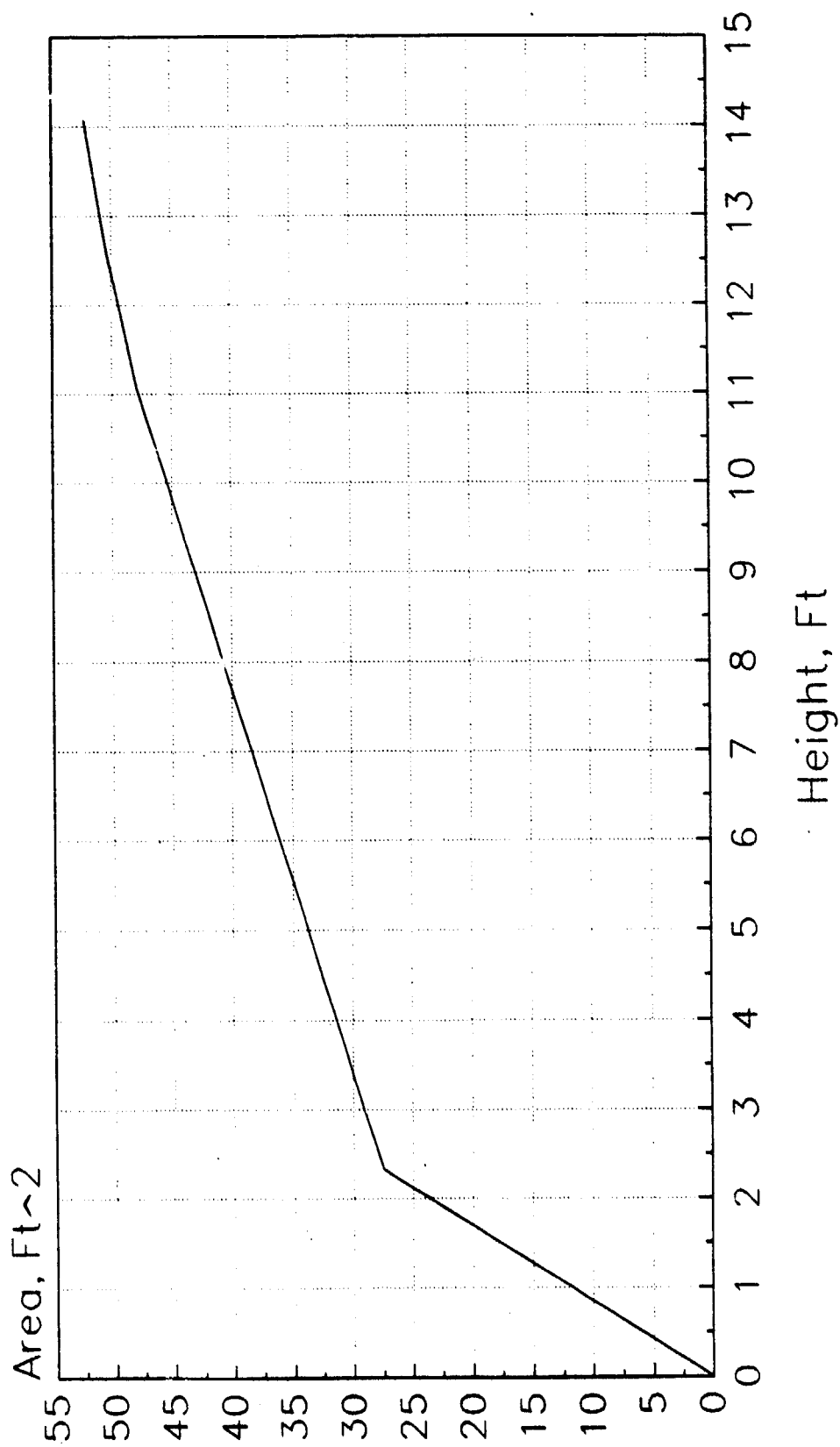
Source of Design:                              Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-1&1-14



# EF36P Class I (11.8x27 LR)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: L11 (3.6 x 6.7 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with lateral daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 439 Lbs.

Buoy Draft: 2.36 Ft.

Overall Buoy Length: 6.74 Ft.

Focal Height of Light: 3.71 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 1.58 Ft.  
Minimum: 1.21 Ft.

Pounds Per Inch Immersion: 55 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass FRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB4 dry cell batt.12v160Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 2.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 3 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Buoy includes rubber fender.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers: Balmoral Group Ltd.

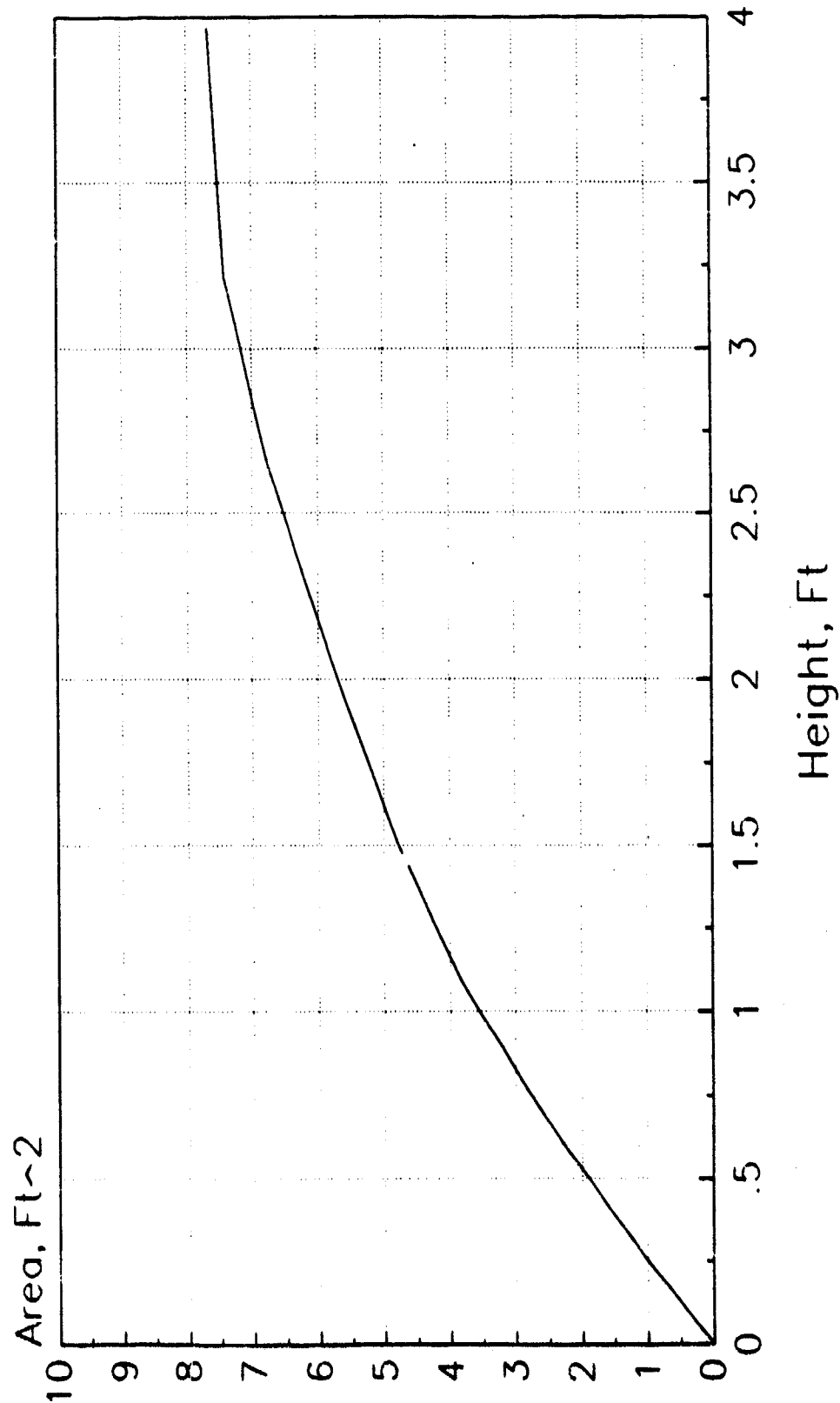
Source of Design: Balmoral Group Ltd.

Drawing Reference: England MFG 1-1&1-16

L111 (3.6x6.7 LR)

Cumulative Area

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## GENERAL INFORMATION

Name of Buoy: L16 (5.3x9.2 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with lateral daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 860 Lbs.

Buoy Draft: 3.38 Ft.

Overall Buoy Length: 9.20 Ft.

Focal Height of Light: 5.34 Ft.

Buoy Beam or Diameter: 5.25 Ft.

Freeboard: No Mooring: 2.36 Ft.  
Minimum: 1.70 Ft.

Pounds Per Inch Immersion: 116 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 dry cell batt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 3.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 4 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

    Buoy includes rubber fender.

Stability Notes:

General Notes

    An optional solar powered version is available.

    Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.

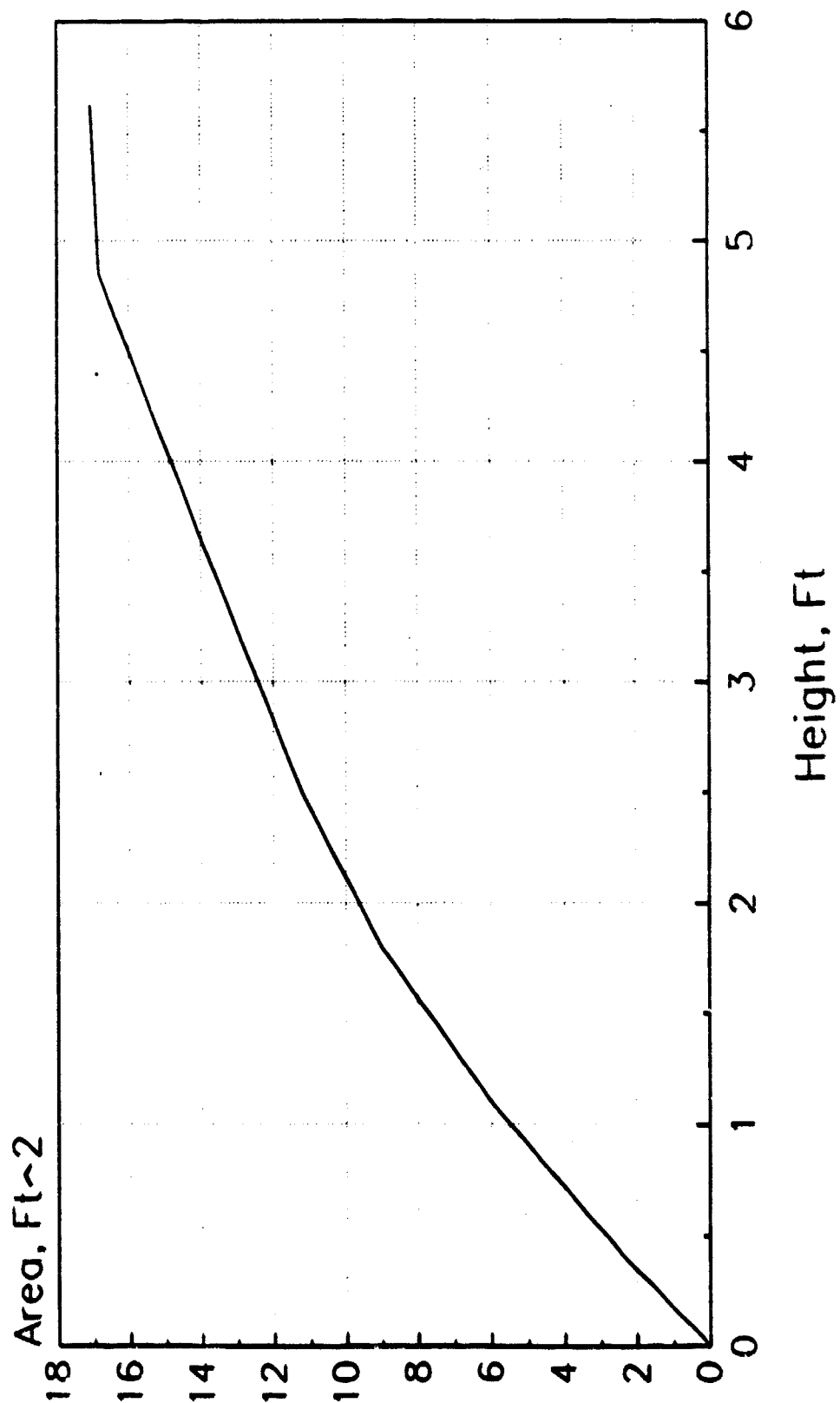
Source of Design:                              Balmoral Group Ltd.

Drawing Reference:                              England MFG 1-1&1-18



# L16 (5.3x9.2 LR)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: L21 (6.9x12 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with lateral daymark, for  
semi-exposed location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,510 Lbs.

Buoy Draft: 4.54 Ft.

Overall Buoy Length: 12.14 Ft.

Focal Height of Light: 6.94 Ft.

Buoy Beam or Diameter: 6.89 Ft.

Freeboard: No Mooring: 2.76 Ft.  
Minimum: 2.15 Ft.

Pounds Per Inch Immersion: 199 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balhane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-incolor, IALA system

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 dry cell batt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: None

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 3.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

## Special Features:

Buoy includes rubber fender.

An optional solar powered version is available.

Stability Notes:

## General Notes

Radar reflector is omnidirectional.

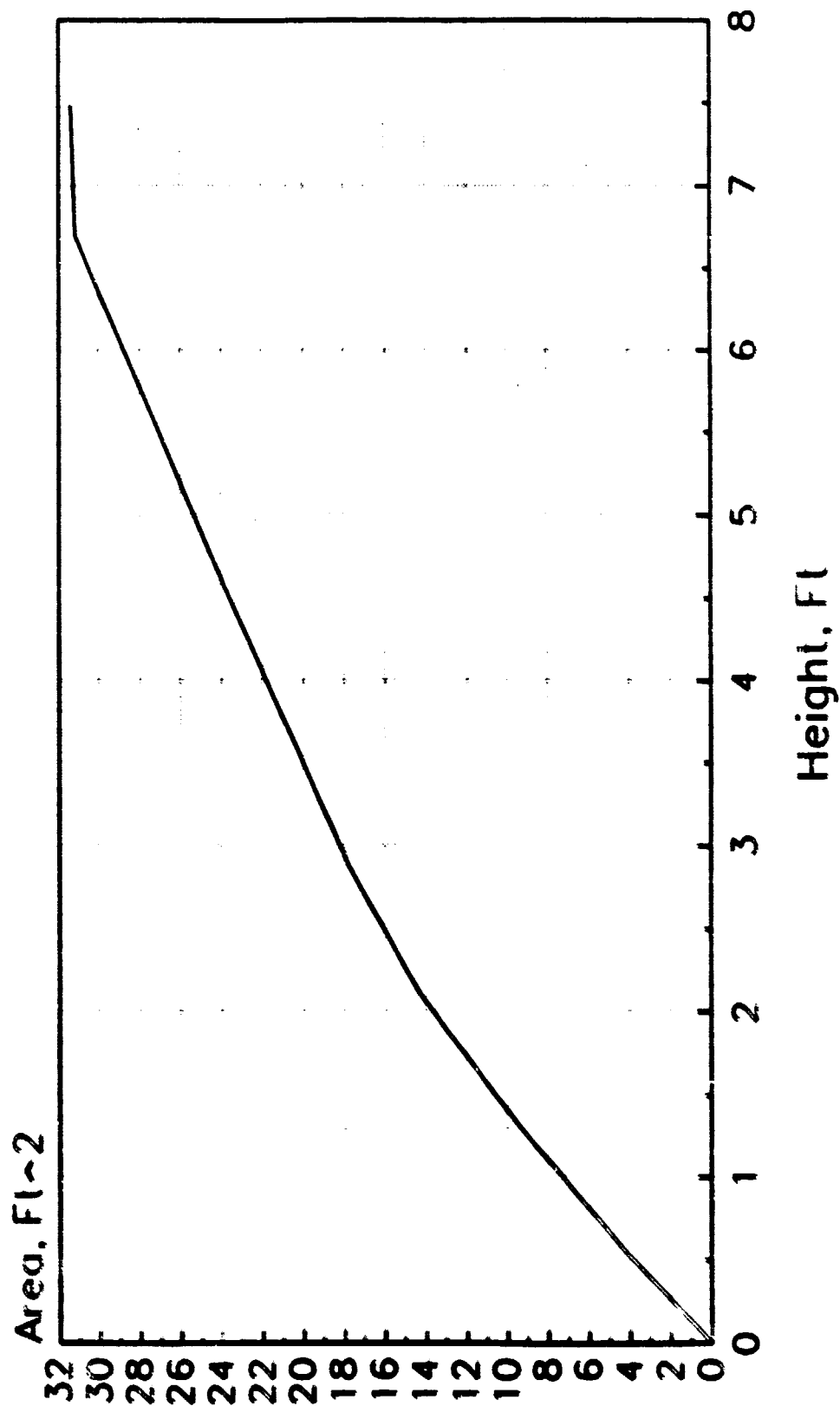
Manufacturers:                              Balmoral Group Ltd.

Source of Design:                           Balmoral Group Ltd.

Drawing Reference:                          England MFG 1-1&1-20

# L21 (6.9x12 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: L40 (13.1x18 LR)

Country of Use: England MFG 1

Function: Lighted offshore buoy, with lateral  
daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 15,430 Lbs.

Buoy Draft: 5.40 Ft.

Overall Buoy Length: 18.37 Ft.

Focal Height of Light: 12.50 Ft.

Buoy Beam or Diameter: 13.12 Ft.

Freeboard: No Mooring: 3.95 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Tapered Cylinder

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Balmoral Solargen pack

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Optional Special

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: EM, shallow water

Nominal Visual Range of Daymark: 3.3 Nmi.

Radar Range: 3.1 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:     \$0  
                     Preparation:       \$0  
                     Monthly Servicing:     \$0

Service Life:                        0.0 Yrs.

Maintenance Interval:                0 Mos.

Maintenance Notes:

Special Features:  
    Buoy includes rubber fender.

Stability Notes:

General Notes

    Radar reflector is omnidirectional.

Manufacturers:                        Balmoral Group Ltd.

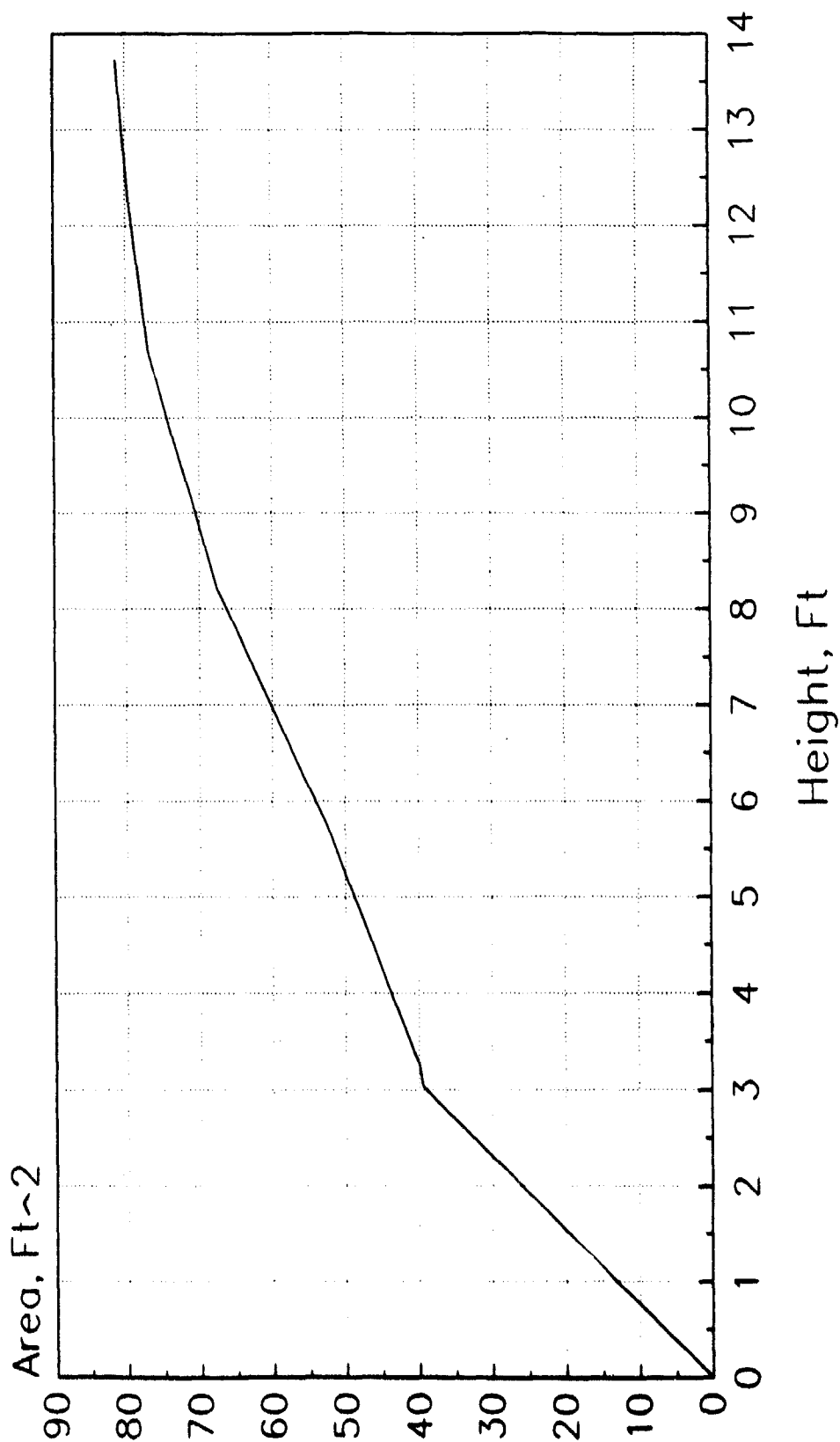
Source of Design:                      Balmoral Group Ltd.

Drawing Reference:                    England MFG 1-1&1-22



# L40 (13.1x18 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: P11 (3.6x10 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with pillar daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 395 Lbs.

Buoy Draft: 2.36 Ft.

Overall Buoy Length: 10.45 Ft.

Focal Height of Light: 4.21 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 1.58 Ft.  
Minimum: 1.24 Ft.

Pounds Per Inch Immersion: 55 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB4 Dry cell batt 12v160Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment:

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 2.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 3 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:  
Buoy includes rubber fender.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers: Balmoral Group Ltd.

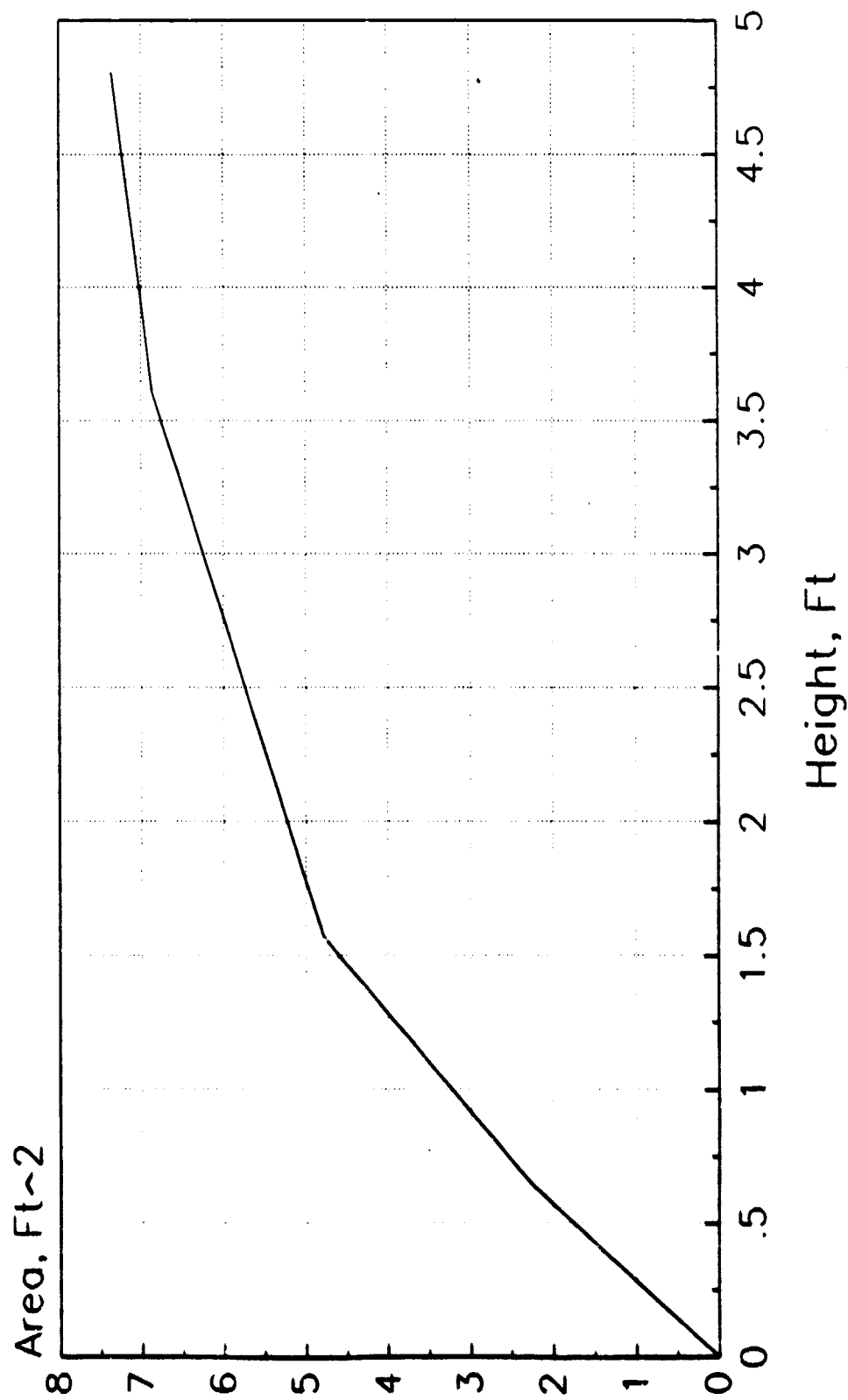
Source of Design: Balmoral Group Ltd.

Drawing Reference: England MFG 1-1&1-17

P11 (3.6x10 LR)

Cumulative Area

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## GENERAL INFORMATION

Name of Buoy: P16 (5.3x13 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with pillar daymark, for  
semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 970 Lbs.

Buoy Draft: 3.40 Ft.

Overall Buoy Length: 12.86 Ft.

Focal Height of Light: 6.66 Ft.

Buoy Beam or Diameter: 5.25 Ft.

Freeboard: No Mooring: 2.39 Ft.  
Minimum: 1.82 Ft.

Pounds Per Inch Immersion: 116 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 Dry cell batt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 1.9 Nmi.

Radar Range: 3.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 4 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:  
    Buoy includes rubber fender.

Stability Notes:

General Notes

    Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.

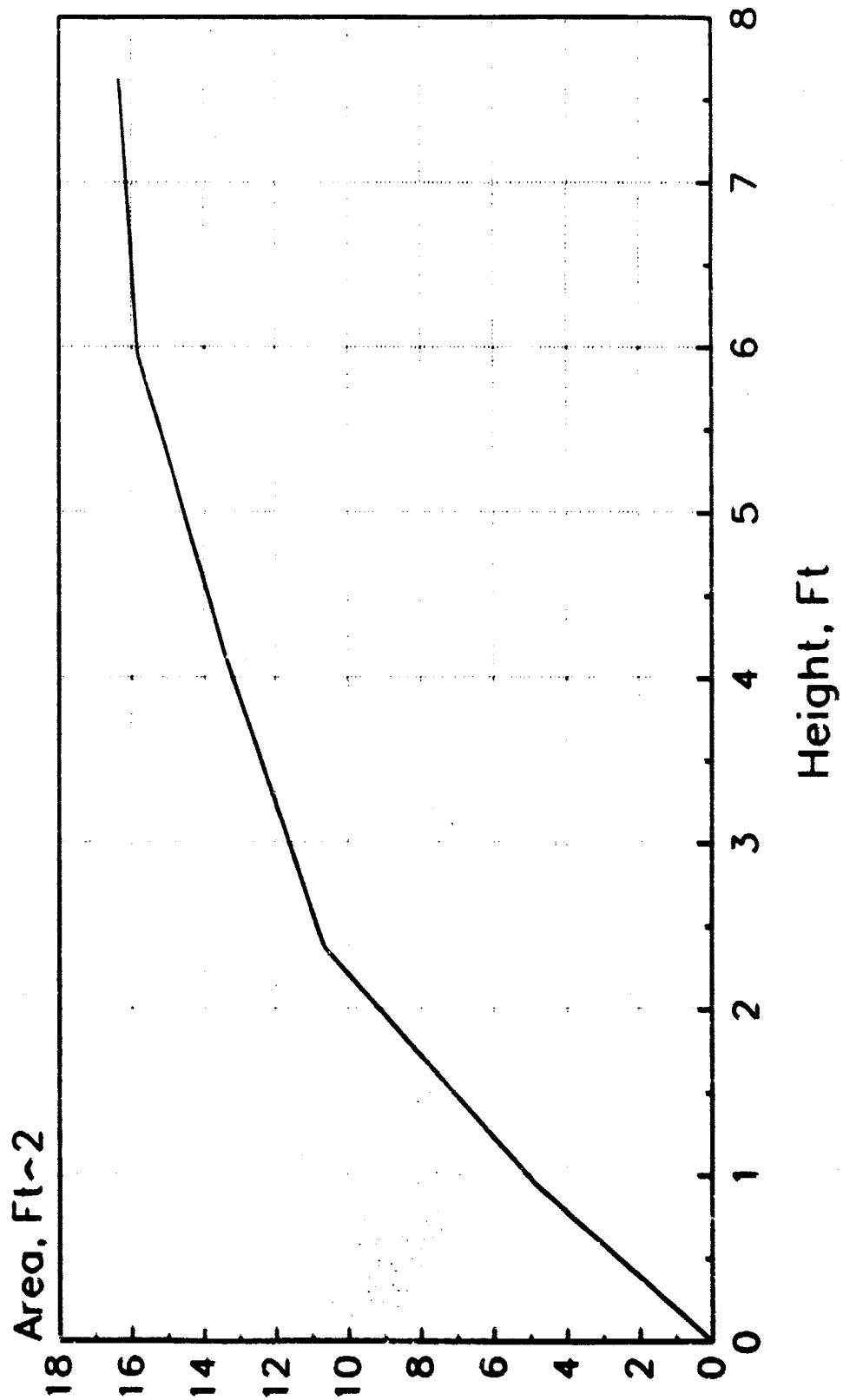
Source of Design:                              Balmoral Group Ltd.

Drawing Reference:                            England MFG 1-1&1-19



# P16 (5.3x13 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: P21 (6.9x17 LR)

Country of Use: England MFG 1

Function: Lighted buoy, with Pillar daymark, for  
semi-exposed location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,620 Lbs.

Buoy Draft: 4.54 Ft.

Overall Buoy Length: 17.47 Ft.

Focal Height of Light: 9.08 Ft.

Buoy Beam or Diameter: 6.89 Ft.

Freeboard: No Mooring: 2.76 Ft.  
Minimum: 1.70 Ft.

Pounds Per Inch Immersion: 199 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color, IALA System

Subdivision: Foam filled

Hull Type: Hourglass

Counterweight Type: Ext. ballast skirt

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 Dry cellbatt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 3.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Buoy includes rubber fender.

An optional solar powered version is available.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

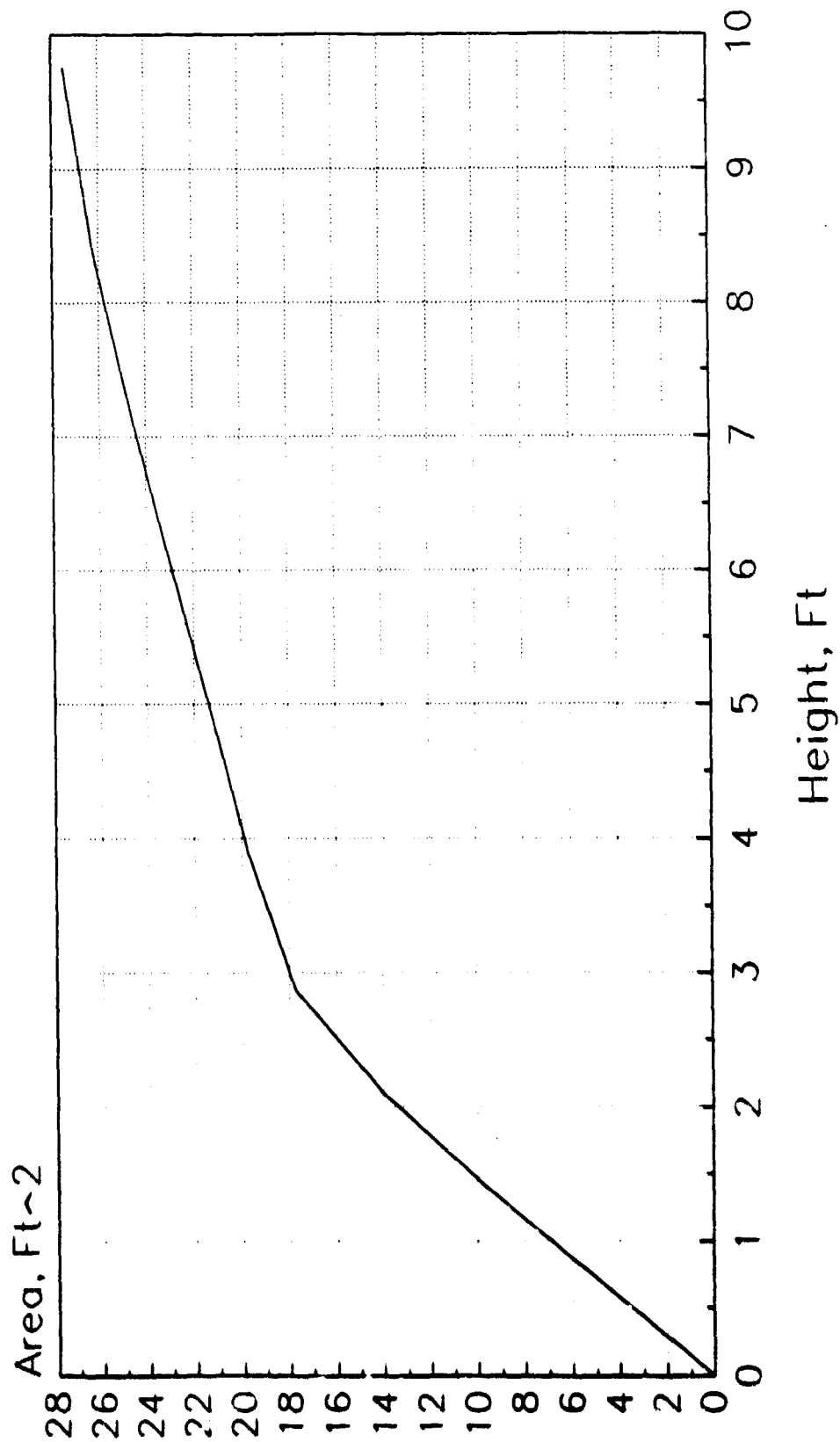
Manufacturers: Balmoral Group Ltd.

Source of Design: Balmoral Group Ltd.

Drawing Reference: England MFG 1-1&1-21

P21 (6.9x17 LR)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: P40 (13.1x30 LR)

Country of Use: England MFG 1

Function: Lighted offshore buoy, with pillar  
daymark.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 16,270 Lbs.

Buoy Draft: 5.40 Ft.

Overall Buoy Length: 29.70 Ft.

Focal Height of Light: 21.30 Ft.

Buoy Beam or Diameter: 13.12 Ft.

Freeboard: No Mooring: 3.95 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Baltec foam  
Tower : Fiberglass GRP  
Topmark : Balthane elastomer  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Tapered cylinder

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: Bal.DB9 Dry cell batt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Lateral

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: EM, Shallow Water

Nominal Visual Range of Daymark: 3.3 Nmi.

Radar Range: 4.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 6 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:       \$0  
                         Preparation:       \$0  
                         Monthly Servicing:     \$0

Service Life:                               0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

## Special Features:

Buoy includes rubber fender.

An optional solar powered version is available.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

Manufacturers:                              Balmoral Group Ltd.

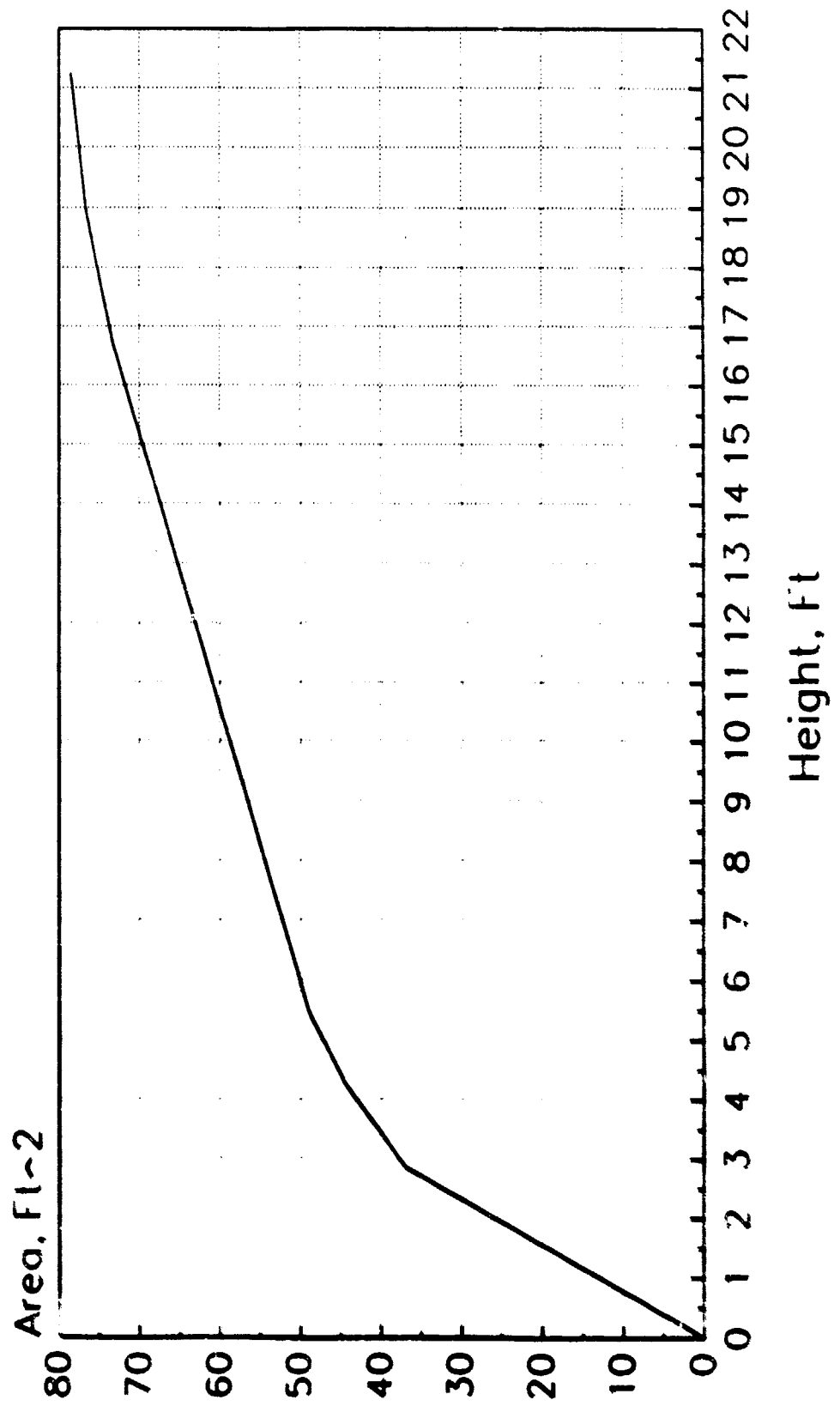
Source of Design:                           Balmoral Group Ltd.

Drawing Reference:                          England MFG 1-1&1-23



# P40 (13.1x30 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: SG2 Spar (1.3x20 LRS)

Country of Use: England MFG 1

Function: Lighted spar buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 485 Lbs.

Buoy Draft: 11.00 Ft.

Overall Buoy Length: 20.00 Ft.

Focal Height of Light: 6.56 Ft.

Buoy Beam or Diameter: 1.31 Ft.

Freeboard: No Mooring: 5.91 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 9 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : GRP/Foam sandwich  
Hull Filling :  
Tower :  
Topmark : Balthane elastomer  
Counterweight: Electric battery

Coating/Coloring System: Moulded-in color, IALA system

Subdivision:

Hull Type: Spar, hexagonal sect

Counterweight Type: Internal

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 drycellbatt.15vx370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Laternal

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 2.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 12 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

## Special Features:

Buoy includes rubber fenders along length.  
An optional solar powered version is available.

## Stability Notes:

Buoy is unstable without electric battery as ballast (132 lb) plus a minimum mooring weight of 280 lb.

## General Notes

Radar reflector is omnidirectional.

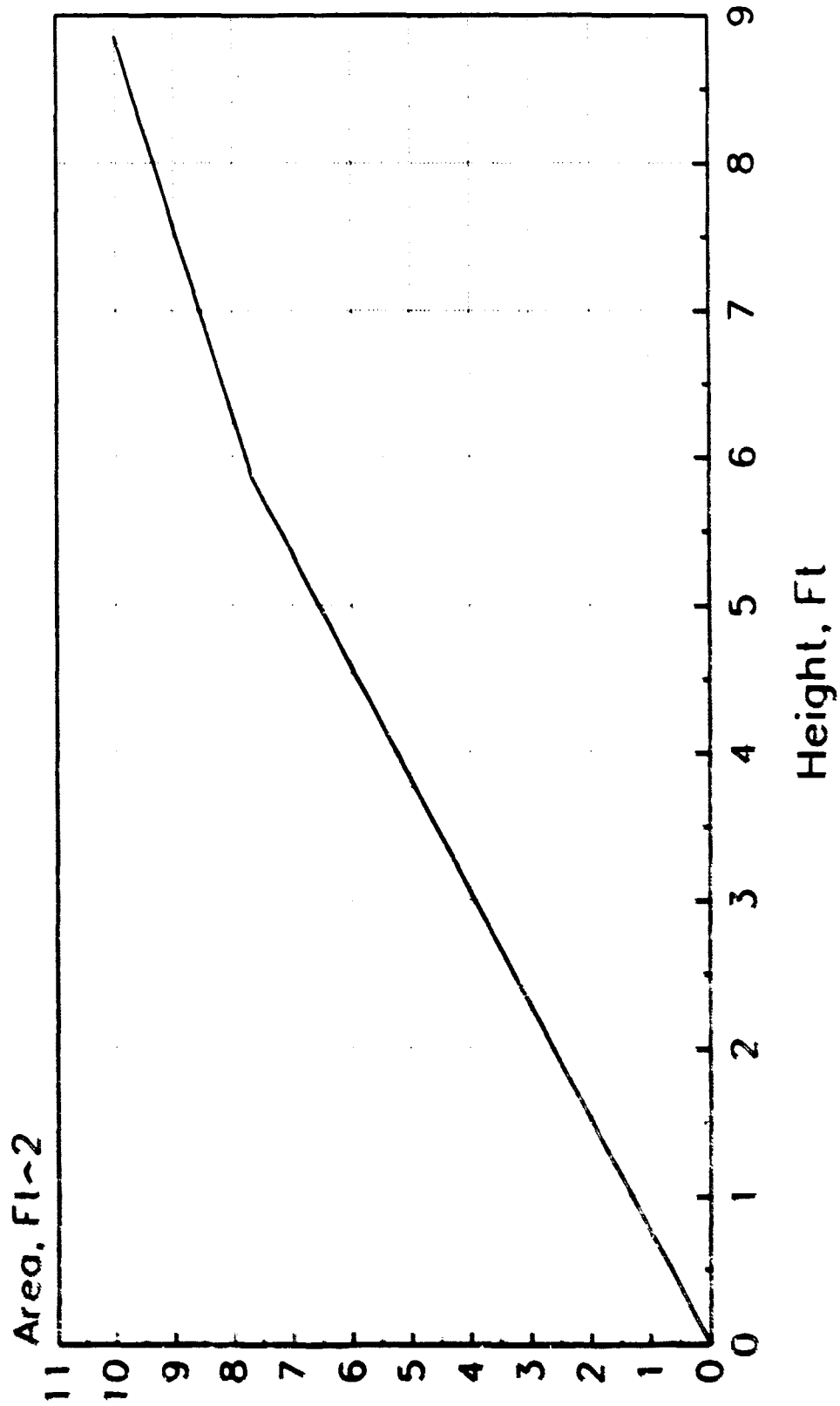
Manufacturers:                              Balmoral Group Ltd.

Source of Design:                            Balmoral Group Ltd.

Drawing Reference:                          England MFG 1-161-24

# SG2 Spar (1.3x20 LRS)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: SG7 Spar (1.3x17 LRS)

Country of Use: England MFG 1

Function: Lighted spar buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 386 Lbs.

Buoy Draft: 9.02 Ft.

Overall Buoy Length: 16.73 Ft.

Focal Height of Light: 5.58 Ft.

Buoy Beam or Diameter: 1.31 Ft.

Freeboard: No Mooring: 4.92 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 9 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : GRP/foam sandwich  
Hull Filling :  
Tower :  
Topmark : Balthane elastomer  
Counterweight: Electric battery

Coating/Coloring System: Moulded-in color, IALA system

Subdivision:

Hull Type: Spar, hexagonal sect

Counterweight Type: Internal

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Bal.DB9 dry cell batt.15v370Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: Optional wave actuated bell

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Cardinal or Laternal

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 1.4 Nmi.

Radar Range: 2.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 10 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

## Special Features:

Buoy includes rubber fenders along lenth.  
An optional solar powered version is available.

## Stability Notes:

Buoy is unstable without electric battery as ballast (132 lb), plus a mininum mooring weight of 176 lb.

## General Notes

Radar reflector is omnidirectional.

Manufacturers:                                Balmoral Group Ltd.

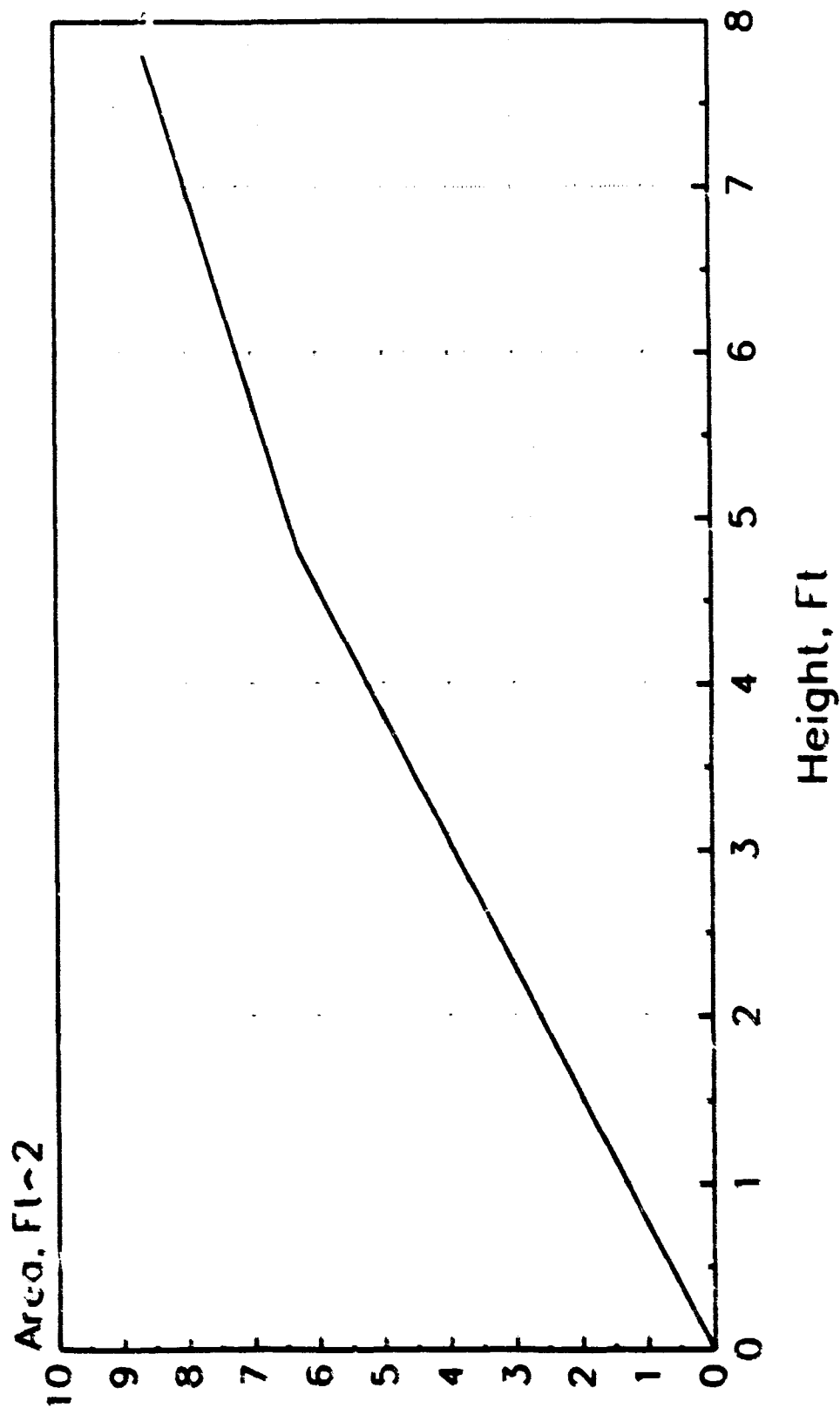
Source of Design:                                Balmoral Group Ltd.

Drawing Reference:                                England MFG 1-161-24



# SG7 Spar (1.3x17 LRS)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Class II, Reinf. Plastic Struc

Country of Use: England MFG 2

Function: Lighted or unlighted electric or gas  
buoy, can be fitted with lateral  
or batwing daymarks, or pillar daymark  
and cardinal topmark.

Date Of Last Update For This Record: 07/27/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,721 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 12.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 9.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 340 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : GRP, rubber fender  
Hull Filling : foam  
Tower : GRP or Steel  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric or Acetylene cylinder  
Lighting Equipment: Electric or Acetylene lantern  
Sound Equipment: none  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.375 In.  
Type: Steel Chain  
Sinkers Size: 4,480 Lbs.  
Topmark Type: Optional Cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Maximum weight of chain 3 tons.

Manufacturers: Reinf. Plastic Struct

Source of Design: R.P.S. (Lewes), Ltd.

Drawing Reference: England MFG 2-1

## GENERAL INFORMATION

Name of Buoy: Class III, Reinf. Plastic Str.

Country of Use: England MFG 2

Function: Lighted or unlighted electric or gas buoy, can be fitted with lateral or batwing daymarks, or pillar daymark and cardinal topmark.

Date Of Last Update For This Record: 07/27/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 4,939 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 10.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 7.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : GRP, rubber fender  
Hull Filling : foam  
Tower : GRP or Steel  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical, tapered

Counterweight Type: Internal or Tube

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric or Acetylene cylinder  
Lighting Equipment: Electric of Acetylene lantern  
Sound Equipment: none  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.250 In.  
Type: Steel Chain  
Sinkers Size: 4,480 Lbs.  
Topmark Type: Optional Cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0 ●

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes: ●

Special Features: ●

Stability Notes: ●

General Notes

Maximum weight of chain 2 tons. ●

Manufacturers:                                Reinf. Plastic Struct

Source of Design:                             R.P.S. (Lewes), Ltd.

Drawing Reference:                            England MFG 2-1 ●

## GENERAL INFORMATION

Name of Buoy: Class V, Reinf. Plastic Struct

Country of Use: England MFG 2

Function: Lighted or unlighted electric or gas  
buoy, fitted with lateral daymark. Can  
also be fitted with pillar daymark and  
cardinal topmark.

Date Of Last Update For This Record: 07/27/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 750 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 6.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 5.50 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 127 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : GRP, rubber fender  
Hull Filling : foam  
Tower : GRP or Steel  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical dished

Counterweight Type: Internal



#### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric or Acetylene cylinder

Lighting Equipment: Electric or Acetylene lantern

Sound Equipment: none

Other Payload: Radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 750 Lbs.

Topmark Type: Optional Cardinal

Number of Padeyes: 2

#### OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Maximum weight of chain 800 lb. with 200 lb. of internal ballast.

Manufacturers:                            Reinf. Plastic Struct

Source of Design:                        R.P.S. (Lewes), Ltd.

Drawing Reference:                        England MFG 2-1

## GENERAL INFORMATION

Name of Buoy: Class VI, Conical

Country of Use: England MFG 2

Function: Lighted or unlighted buoy, fitted with lateral daymark. Can also be fitted with pillar daymark and cardinal topmark.

Date Of Last Update For This Record: 07/27/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 5.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.50 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : GRP  
Hull Filling : foam  
Tower : GRP  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision:

Hull Type: Conical

Counterweight Type: Internal

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric battery

Lighting Equipment: Electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.625 In.  
Type: Steel Chain

Sinker Size: 400 Lbs.

Topmark Type: Optional Cardinal

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:         \$0  
                     Monthly Servicing:       \$0

Service Life:                        0.0 Yrs.

Maintenance Interval:                0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

Maximum flooring weight: 250 lb.

Manufacturers:                        Reinf. Plastic Struct

Source of Design:                     R.P.S. (Lewes), Ltd.

Drawing Reference:                    England MFG 2-1

## GENERAL INFORMATION

Name of Buoy: Class VI, Dished

Country of Use: England MFG 2

Function: Lighted or unlighted buoy, fitted with lateral daymark. Can be fitted with pillar daymark and cardinal topmark.

Date Of Last Update For This Record: 07/27/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 3.17 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.50 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : GRP  
Hull Filling : foam  
Tower : GRP  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical, dished

Counterweight Type: Internal

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric battery

Lighting Equipment: Electric lantern

Sound Equipment: none

Other Payload: none

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.625 In.  
Type: Steel Chain

Sinker Size: 400 Lbs.

Topmark Type: Optional Cardinal

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM, Shallow Water

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

Maximum mooring weight: 250 lb.

Manufacturers: Reinf. Plastic Struct

Source of Design: R.P.S. (Lewes), Ltd.

Drawing Reference: England MFG 2-1



## GENERAL INFORMATION

Name of Buoy: Reinforced Plastic Struct-SPAR

Country of Use: England MFG 2

Function: Lighted or unlighted spar buoy, with  
optional topmark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 600 Lbs.

Buoy Draft: 8.75 Ft.

Overall Buoy Length: 19.75 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 2.00 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 17 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : GRP  
Hull Filling : foam  
Tower : GRP  
Topmark : GRP  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: SPAR

Counterweight Type: Extrnl.ball or morng

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric battery  
Lighting Equipment: Electric lantern  
Sound Equipment: none  
Other Payload: none  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length: 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Ch. In  
Sinkers Size: 300 Lbs.  
Topmark Type: Optional Cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 10 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Mooring and external ballast to be chosen to equal 600 lbs  
for vertical riding.

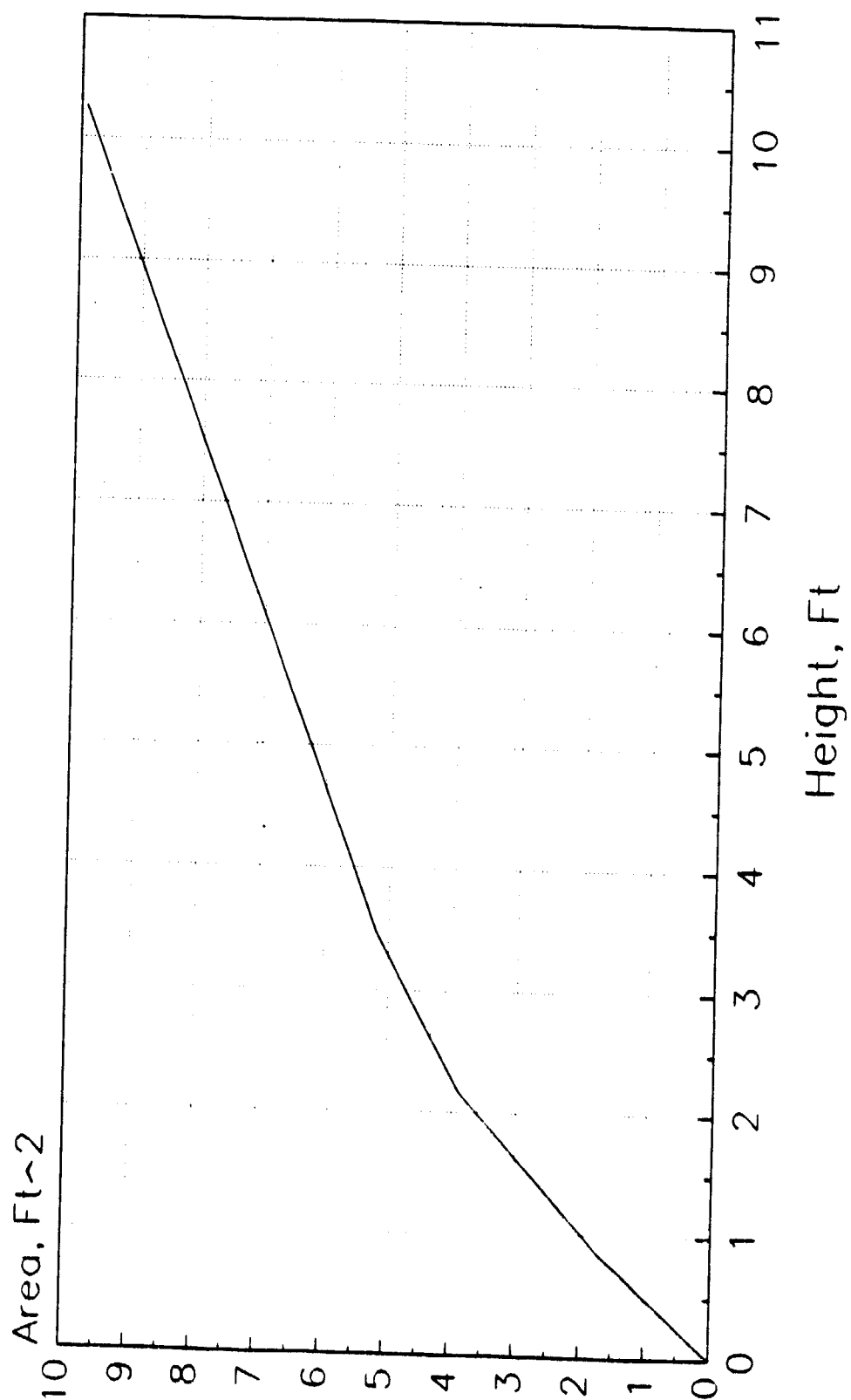
Manufacturers:                            Reinf. Plastic Struc

Source of Design:                        R.P.S. (Lewes), Ltd.

Drawing Reference:                        England MFG 2-1

# Reinforced Plastic Struct-SPAR

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: BC-21 Catamaran (6.6x9.8 LR)

Country of Use: England MFG 3

Function: Lighted inshore GRP catamaran buoy, for  
estuaries, shallow and fast flowing.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 430 Lbs.

Buoy Draft: 0.66 Ft.

Overall Buoy Length: 9.80 Ft.

Focal Height of Light: 5.25 Ft.

Buoy Beam or Diameter: 6.60 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polyurethane foam  
Tower : Galvaniz. Steel mast  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color on hull

Subdivision: Foam filled

Hull Type: Catamaran

Counterweight Type: none

RELATED EQUIPMENT

Number of Power Sources: 15  
Type of Power Sources: PM-1015 Primary bat 1.3v1200Ah  
Lighting Equipment: 155mm electric lantern  
Sound Equipment: none  
Other Payload: RBS-13.5/20 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.472 In.  
Type: Steel Chain  
Sinker Size: 550 Lbs.  
Topmark Type: Various  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: PF, shallow  
Nominal Visual Range of Daymark: 2.2 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0 ●

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes: ●

Special Features: ●

Stability Notes: ●

General Notes

Has symetrical catamaran hulls, batwing daymarks.  
155 lb. maximum mooring weight.  
A solar powered option is available. ●

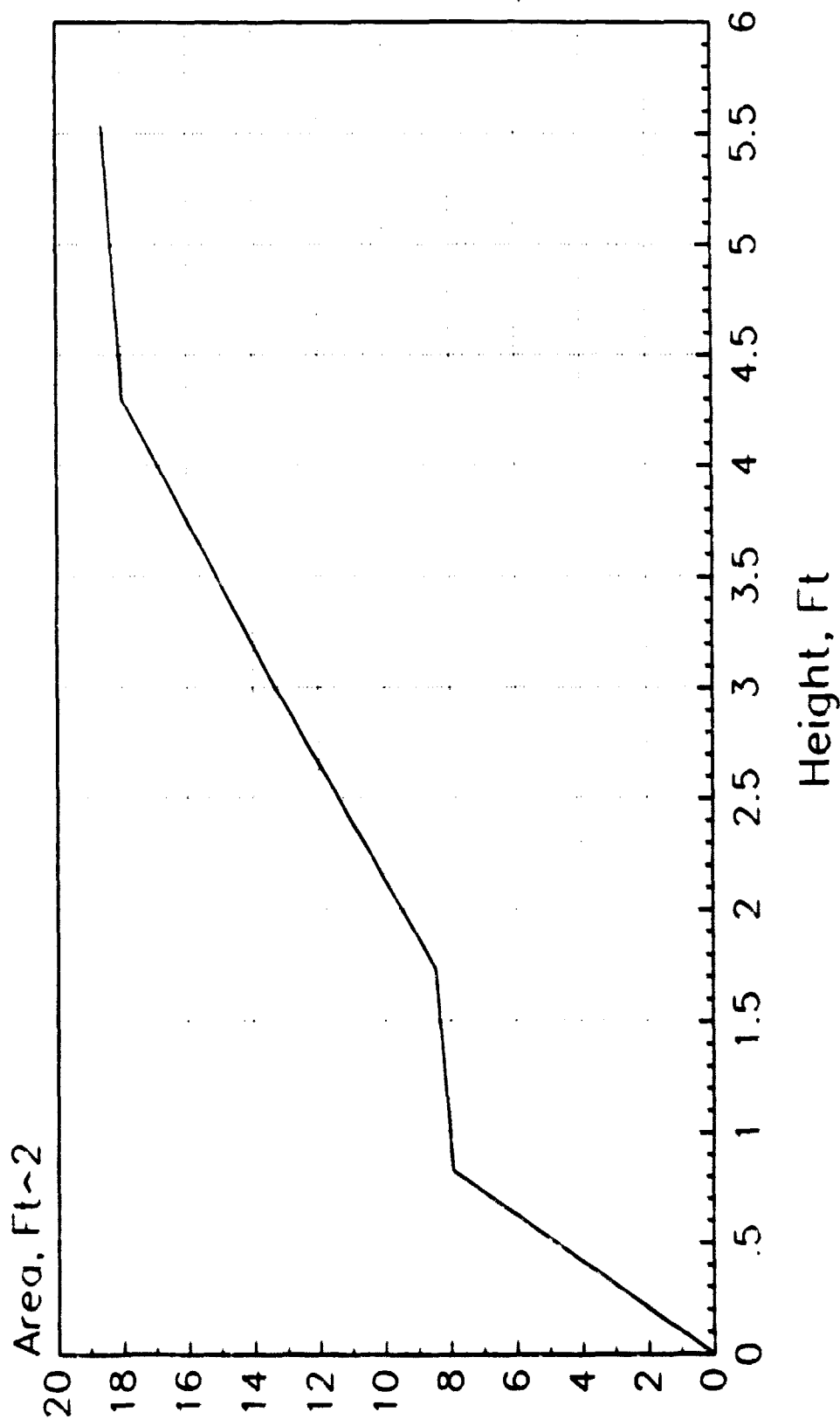
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                             Pharos Marine, Ltd

Drawing Reference:                           England MFG 3-1 & 3-2 ●

# BC-21 Catamaran (6.6x9.8 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BC-22 Catamaran (9.0x16 LR)

Country of Use: England MFG 3

Function: Lighted inshore GRP catamaran buoy, for  
estuaries, shallow and fast flowing.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,740 Lbs.

Buoy Draft: 0.98 Ft.

Overall Buoy Length: 16.00 Ft.

Focal Height of Light: 9.00 Ft.

Buoy Beam or Diameter: 9.02 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polyurethane foam  
Tower : Galv. Steel tube  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color on hull

Subdivision: Foam filled

Hull Type: Catamaran

Counterweight Type: none

RELATED EQUIPMENT

Number of Power Sources: 30  
Type of Power Sources: PM-1015 Primary bat 1.3v1200Ah  
Lighting Equipment: 155mm Electric lantern  
Sound Equipment: none  
Other Payload: RBSM-30-10 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.750 In.  
Type: Steel Chain  
Sinker Size: 550 Lbs.  
Topmark Type: Various  
Number of Padeyes: 6

OPERATING CHARACTERISTICS

Operating Environment: SF, shallow  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

## Special Features:

Has planing catamaran hulls.

## Stability Notes:

## General Notes

500 lb. maximum mooring weight.

A solar powered option is available.

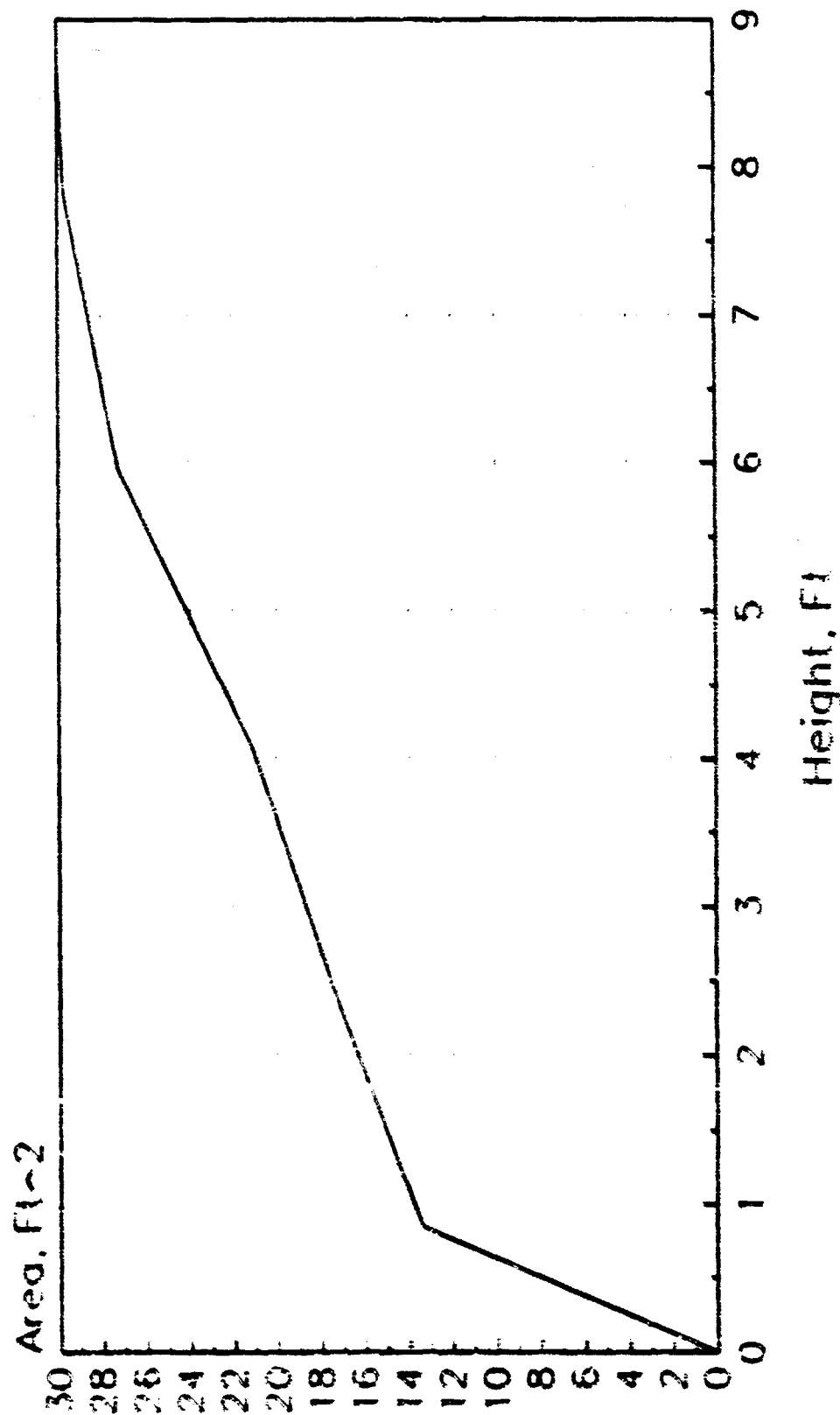
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-2

# BC-22 Catamaran (9.0x16 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-13 (3.3x5.8 LR)

Country of Use: England MFG 3

Function: Lighted inshore buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 287 Lbs.

Buoy Draft: 1.31 Ft.

Overall Buoy Length: 5.80 Ft.

Focal Height of Light: 3.94 Ft.

Buoy Beam or Diameter: 3.28 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polyurethane foam  
Tower : GRP  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 12  
Type of Power Sources: PM-1015 Primary bat 1.3v1200Ah  
Lighting Equipment: 85mm electric lantern  
Sound Equipment: none  
Other Payload: RBS-13.5/20 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.472 In.  
Type: Steel Chain  
Sinker Size: 550 Lbs.  
Topmark Type: Various  
Number of Padeyes: 1

## OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water  
Nominal Visual Range of Daymark: 1.7 Nmi.  
Radar Range: 1.5 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 2 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

200 lb. maximum mooring weight.  
A solar powered option is available.

Radar reflector is omnidirectional.

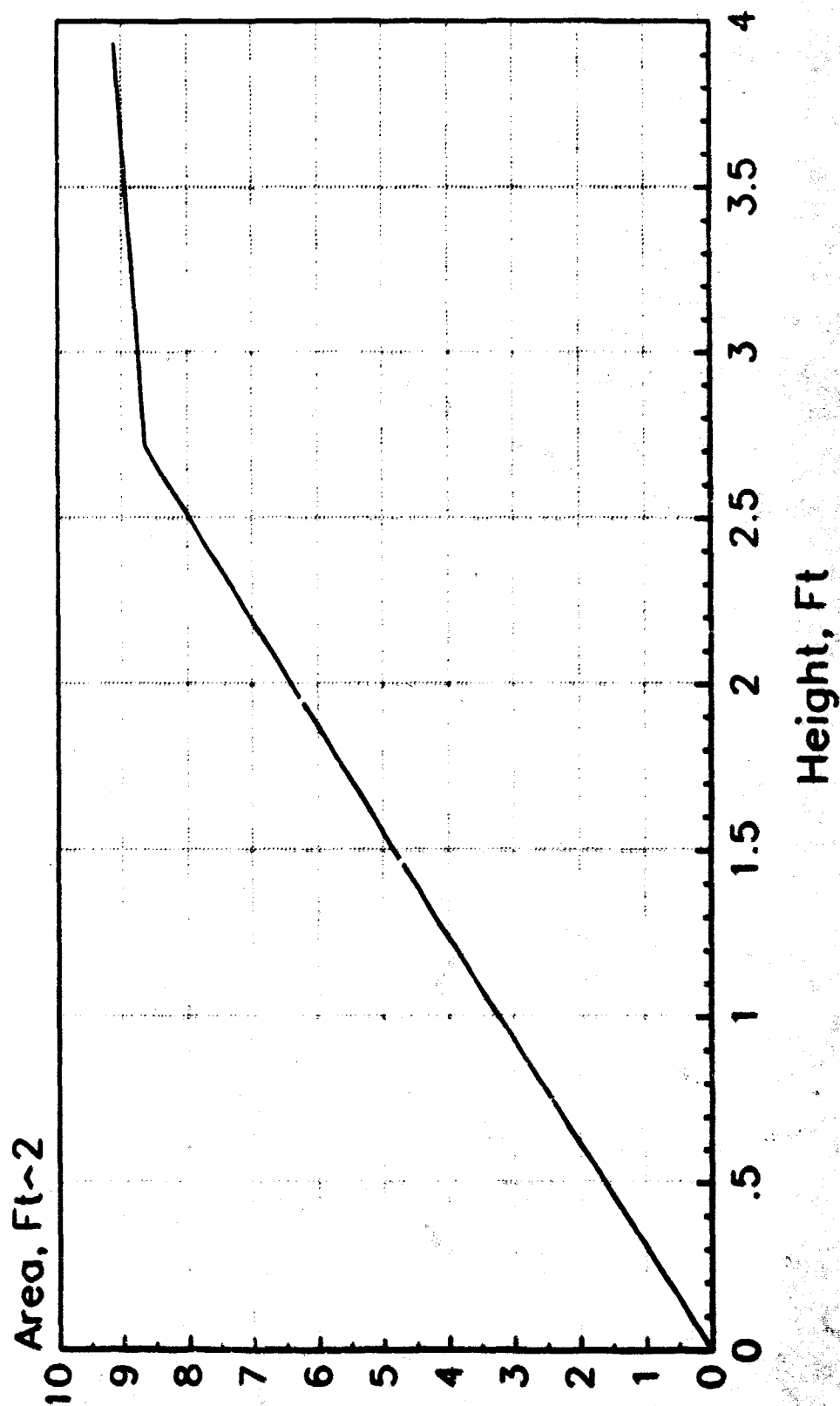
Manufacturers:                    Pharos Marine, Ltd

Source of Design:                Pharos Marine, Ltd

Drawing Reference:                England MFG 3-1 & 3-3

BS-13 (3.3x5.8 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-14 (3.6x5.7 LR)

Country of Use: England MFG 3

Function: Lighted inshore buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 556 Lbs.

Buoy Draft: 1.54 Ft.

Overall Buoy Length: 5.70 Ft.

Focal Height of Light: 3.61 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Poloyurethane foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: PM-318 Primary batt 18v 300Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: RBS-13.5/20 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.472 In.  
Type: Steel Chain

Sinker Size: 550 Lbs.

Topmark Type: Various

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM, shallow water

Nominal Visual Range of Daymark: 1.9 Nmi.

Radar Range: 1.5 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 2 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

220 lb. maximum mooring weight.  
A solar powered option is available.

Radar reflector is omnidirectional.

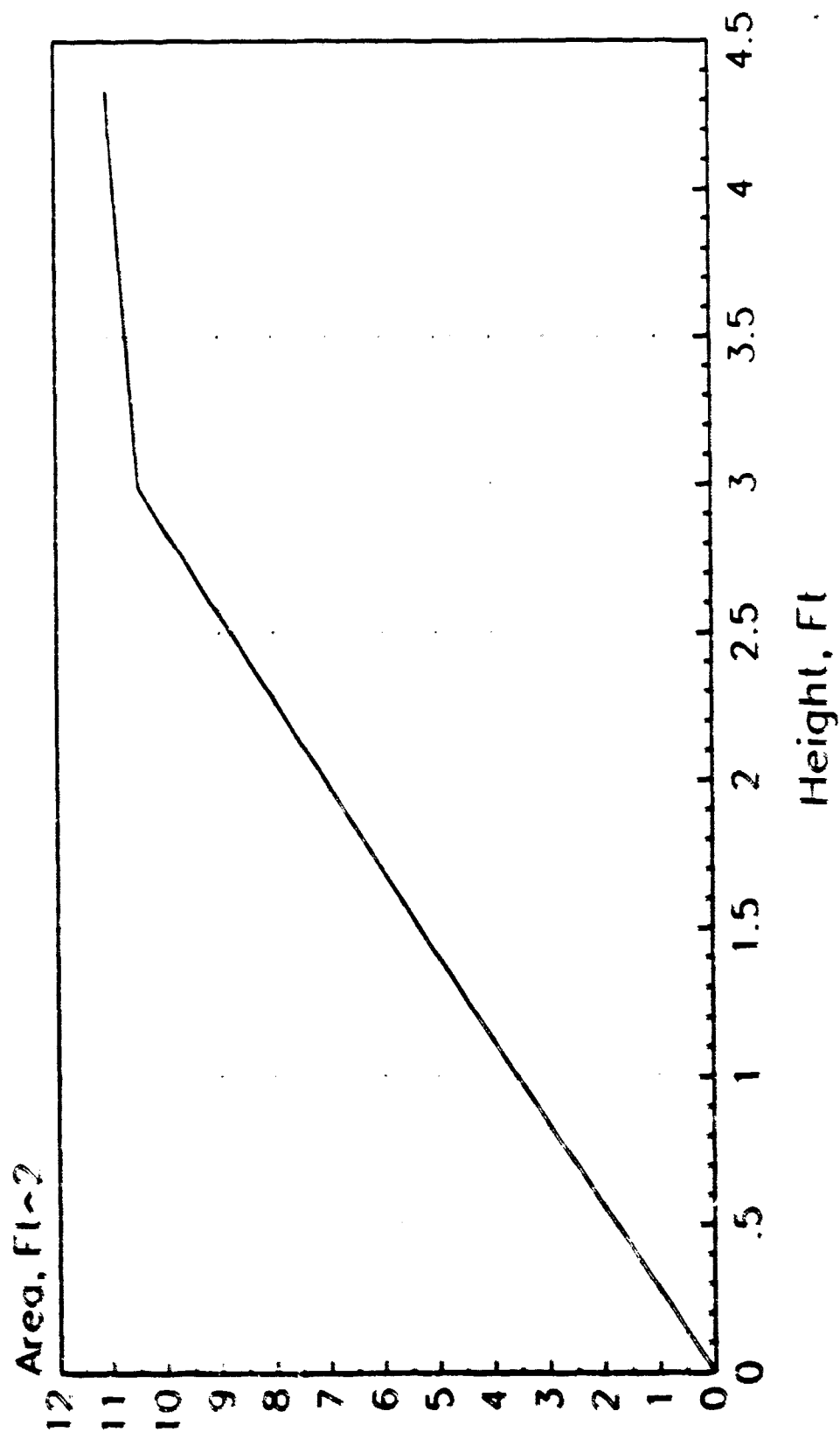
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                            Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 63-3

BS-14 (3.6x5.7 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-16 (5.3x8.1 LR)

Country of Use: England MFG 3

Function: Lighted buoy, for semi-protected  
location.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 1,808 Lbs.

Buoy Draft: 1.64 Ft.

Overall Buoy Length: 8.10 Ft.

Focal Height of Light: 5.91 Ft.

Buoy Beam or Diameter: 5.25 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polurethane foam  
Tower : GRP  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type:

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-1015 Primary bat 1.3v1200Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: RBS-13.5 5/20 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.472 In.  
Type: Steel Chain

Sinker Size: 1,100 Lbs.

Topmark Type: Various

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: SM, shallow water

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 2.1 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 2 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

510 lb. maximum mooring weight.  
A solar powered option is available.

Radar reflector is omnidirectional.

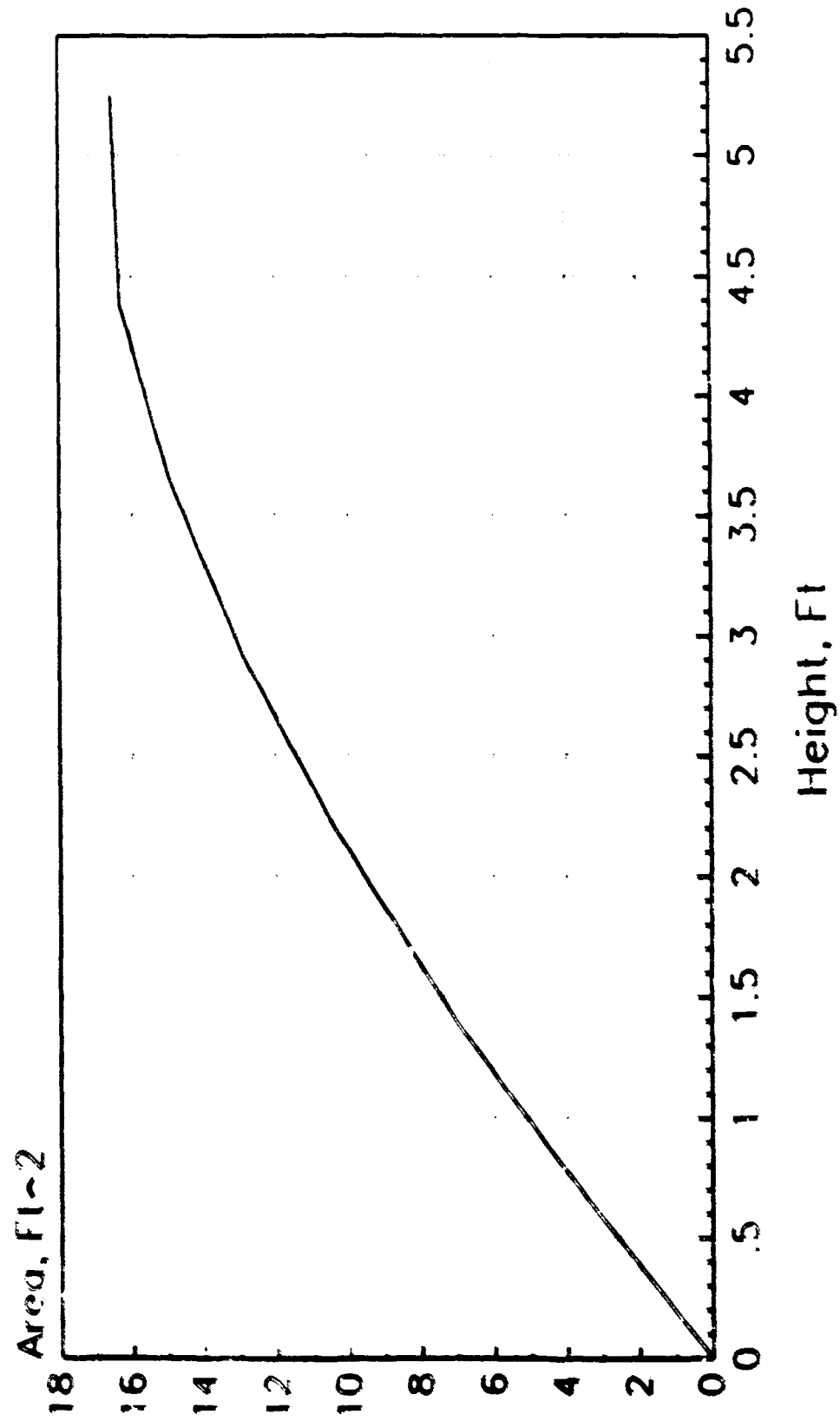
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                            Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 63-3

# BS-16 (5.3x8.1 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-1830 (5.9x17 LR)

Country of Use: England MFG 3

Function: Lighted buoy, with skirt keel and  
batwing daymark, for semi-protected  
location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 4,850 Lbs.

Buoy Draft: 6.56 Ft.

Overall Buoy Length: 17.00 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 5.90 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 146 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 6mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-164 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 2,200 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 3.9 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

840 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

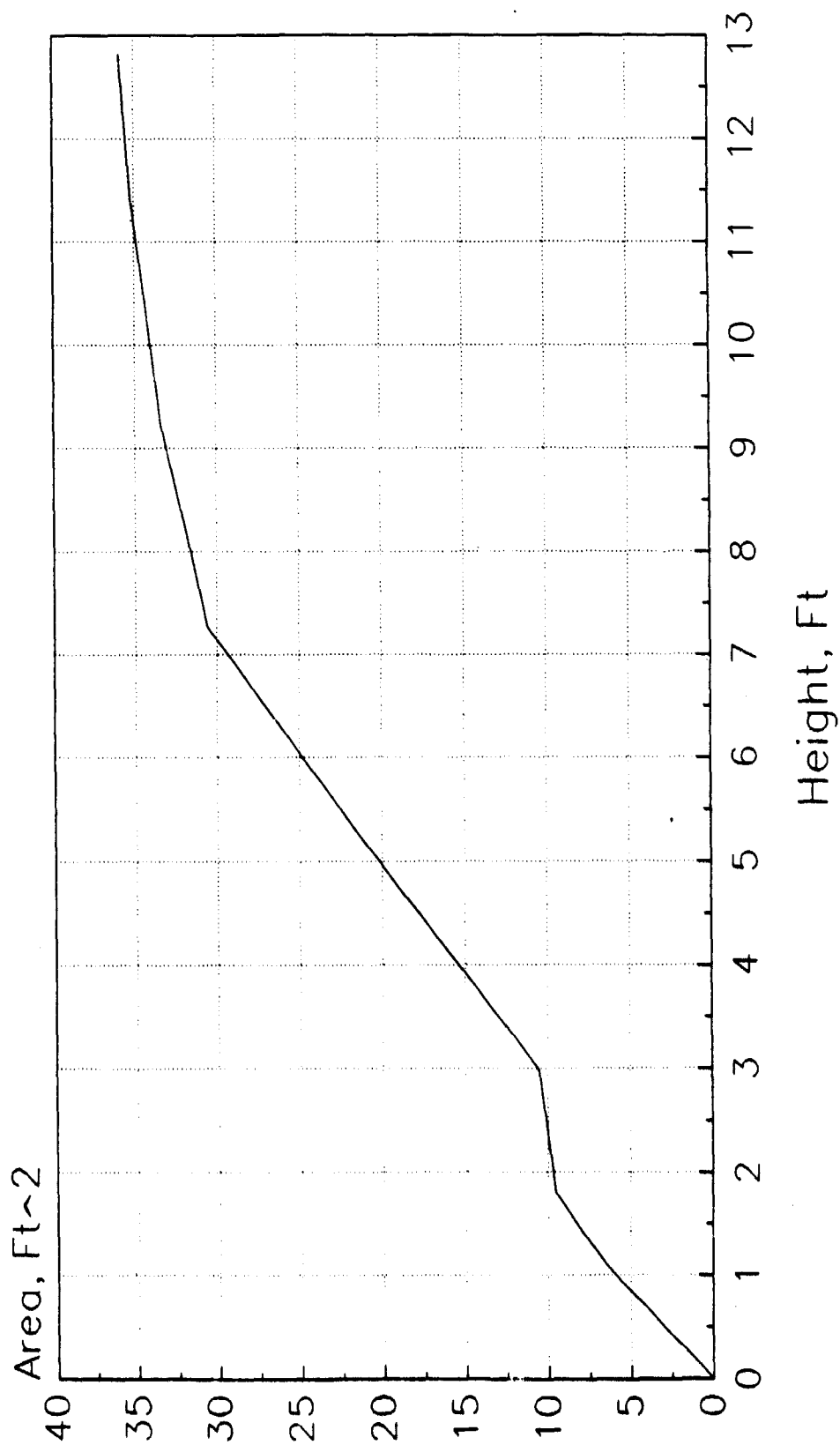
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                           Pharos Marine, Ltd

Drawing Reference:                           England MFG 3-1 & 3-4

BS-1830 (5.9x17 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-2230 (7.2x17 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,600 Lbs.

Buoy Draft: 6.89 Ft.

Overall Buoy Length: 17.30 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 219 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm Pl  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-16 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 3.8 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

2430 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

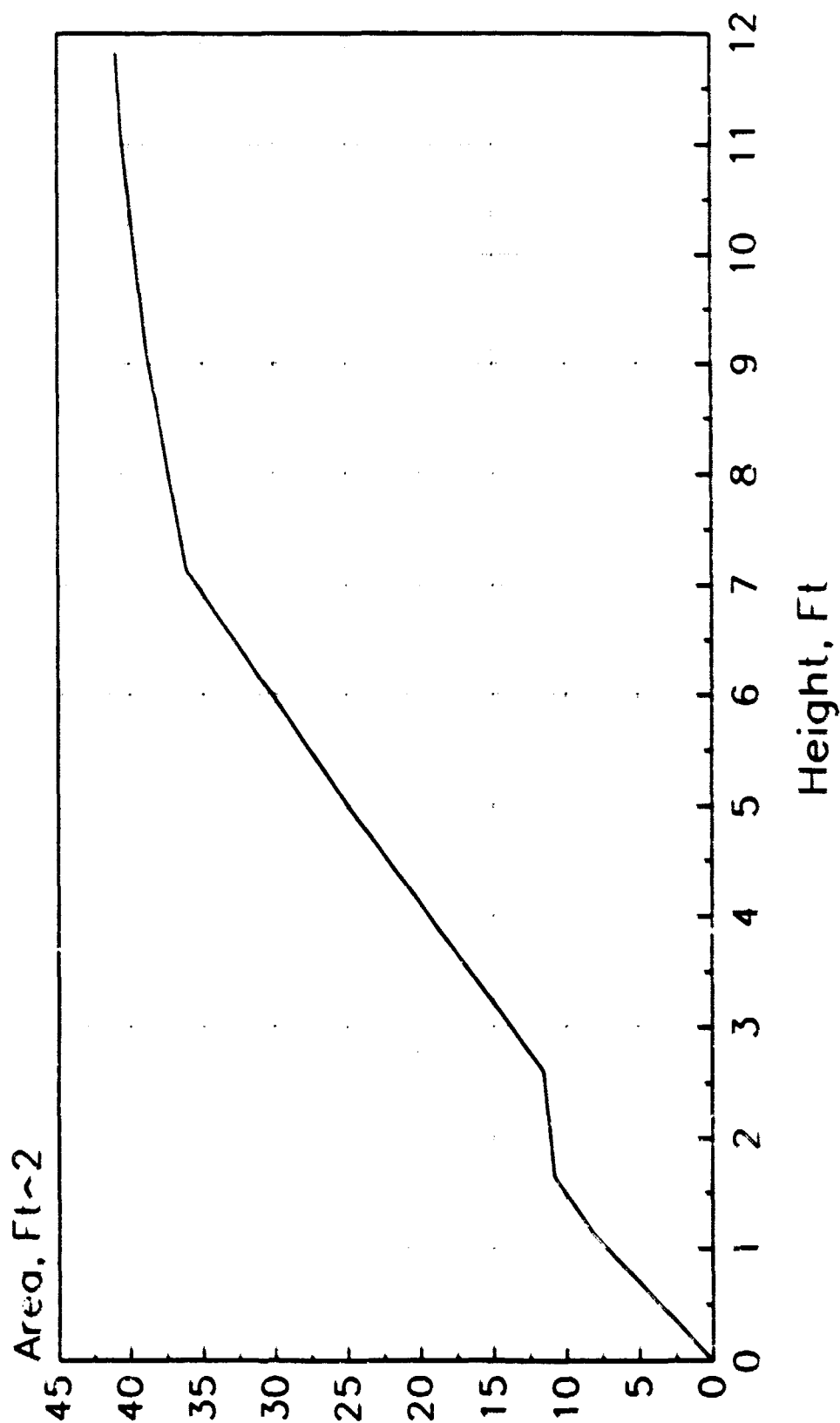
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                              Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-4

BS-2230 (7.2x17 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-2240 (7.2x21 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,620 Lbs.

Buoy Draft: 6.90 Ft.

Overall Buoy Length: 20.60 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 219 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-166 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 5.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

2430 lb. maximum mooring weight.

A solar powered option is available.

An optional marine grade fender is available.

Radar reflector is omnidirectional.

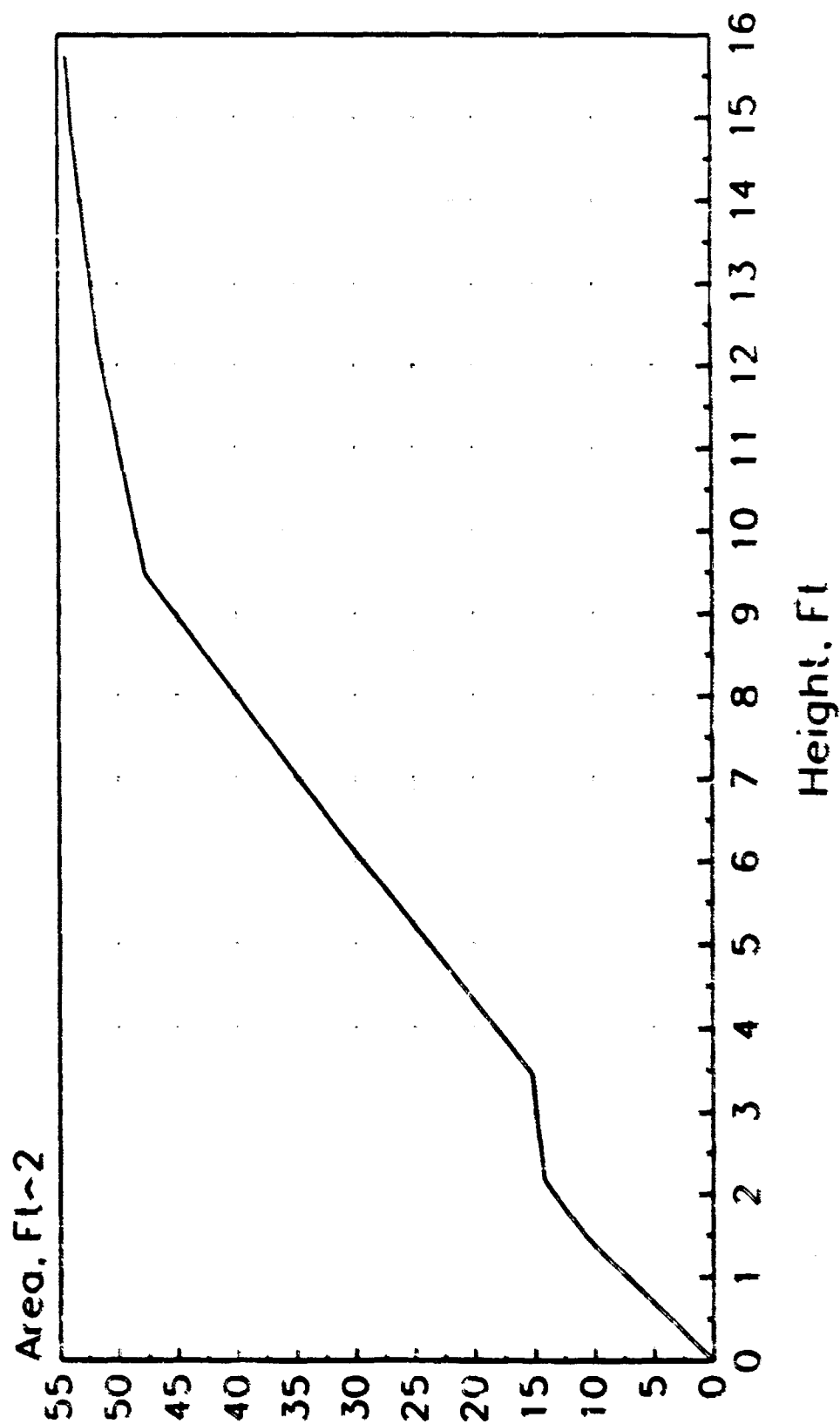
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 63-4

# BS-2240 (7.2x21 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-2630 (8.5x17 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,900 Lbs.

Buoy Draft: 6.55 Ft.

Overall Buoy Length: 17.00 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12  
Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah  
Lighting Equipment: 155mm electric lantern  
Sound Equipment: none  
Other Payload: Optionl SR-164 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.250 In.  
Type: Steel Chain  
Sinker Size: 3,310 Lbs.  
Topmark Type: Various  
Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.4 Nmi.  
Radar Range: 3.7 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.

A solar powered option is available.

An optional marine grade fender is available.

Radar reflector is omnidirectional.

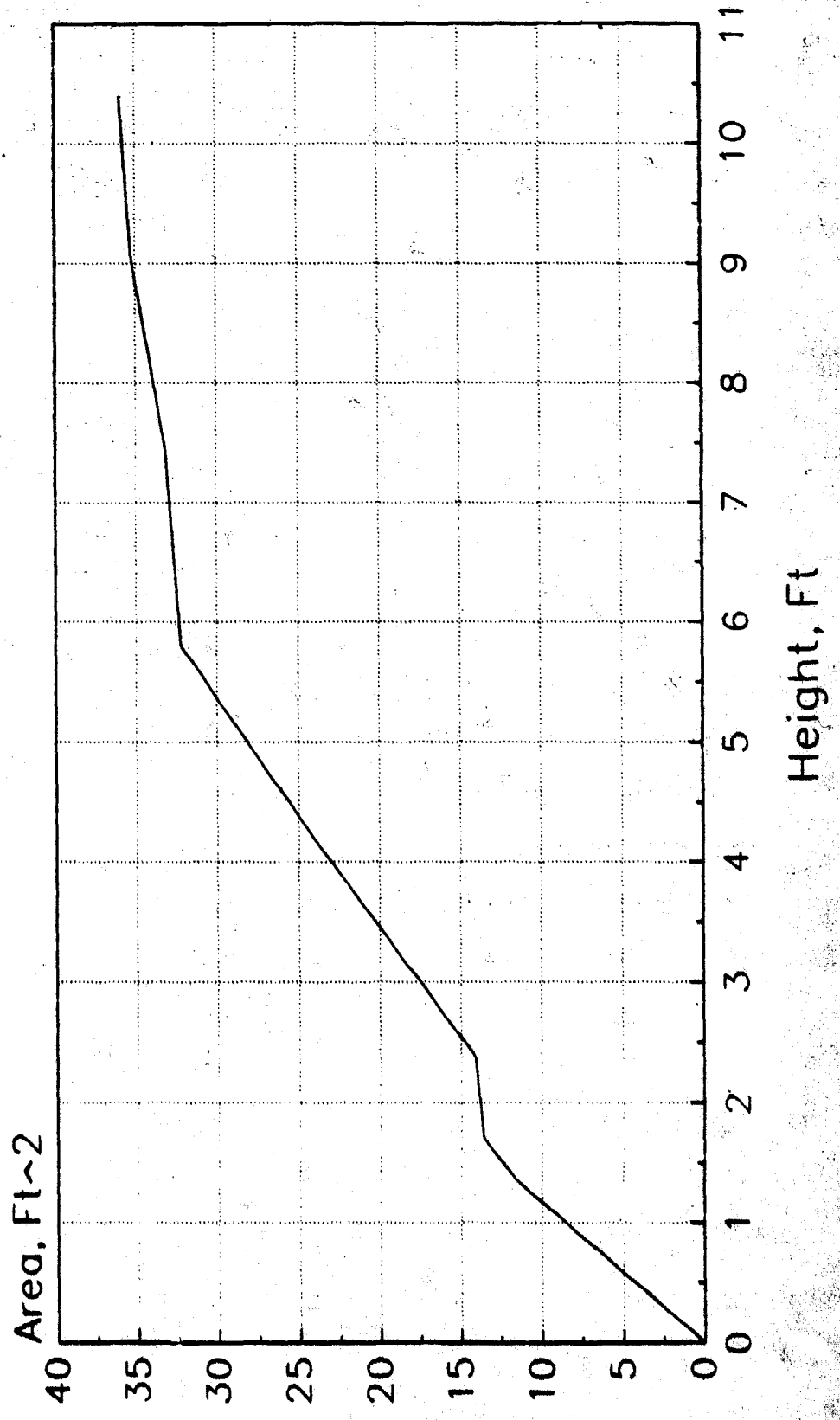
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 63-4

# BS-2630 (8.5x17 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-2640 (8.5x20 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,920 Lbs.

Buoy Draft: 6.56 Ft.

Overall Buoy Length: 20.30 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 5.1 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

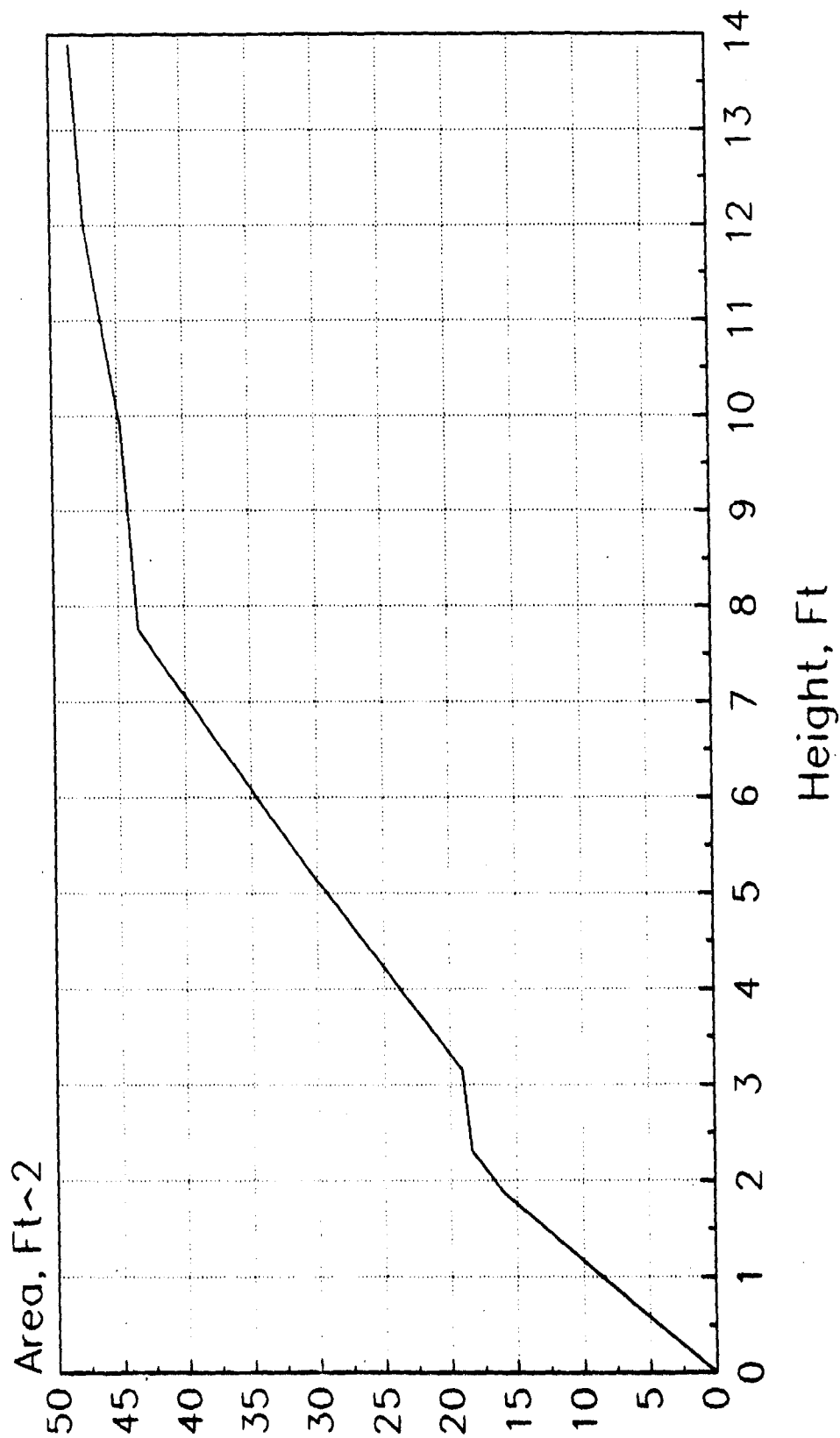
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                             Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-4

BS-2640 (8.5x20 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-2650 (8.5x24 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update: For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,940 Lbs.

Buoy Draft: 6.56 Ft.

Overall Buoy Length: 23.50 Ft.

Focal Height of Light: 16.40 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-166 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 5.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.

A solar powered option is available.

An optional marine grade fender is available.

Radar reflector is omnidirectional.

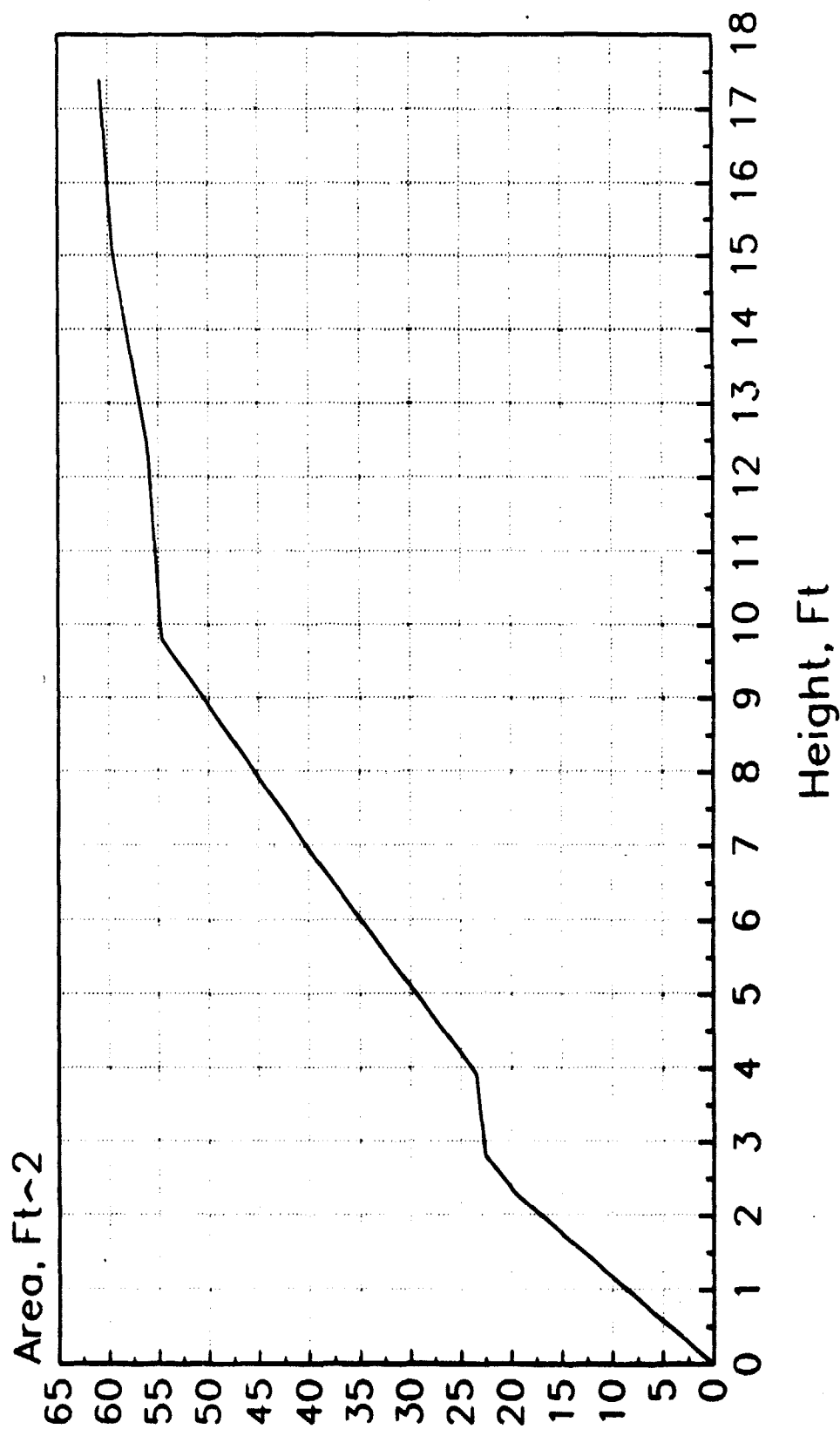
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-4

# BS-2650 (8.5x24 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-3030 (9.8x17 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 13,870 Lbs.

Buoy Draft: 6.55 Ft.

Overall Buoy Length: 17.00 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-164 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.375 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 3.9 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

5510 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

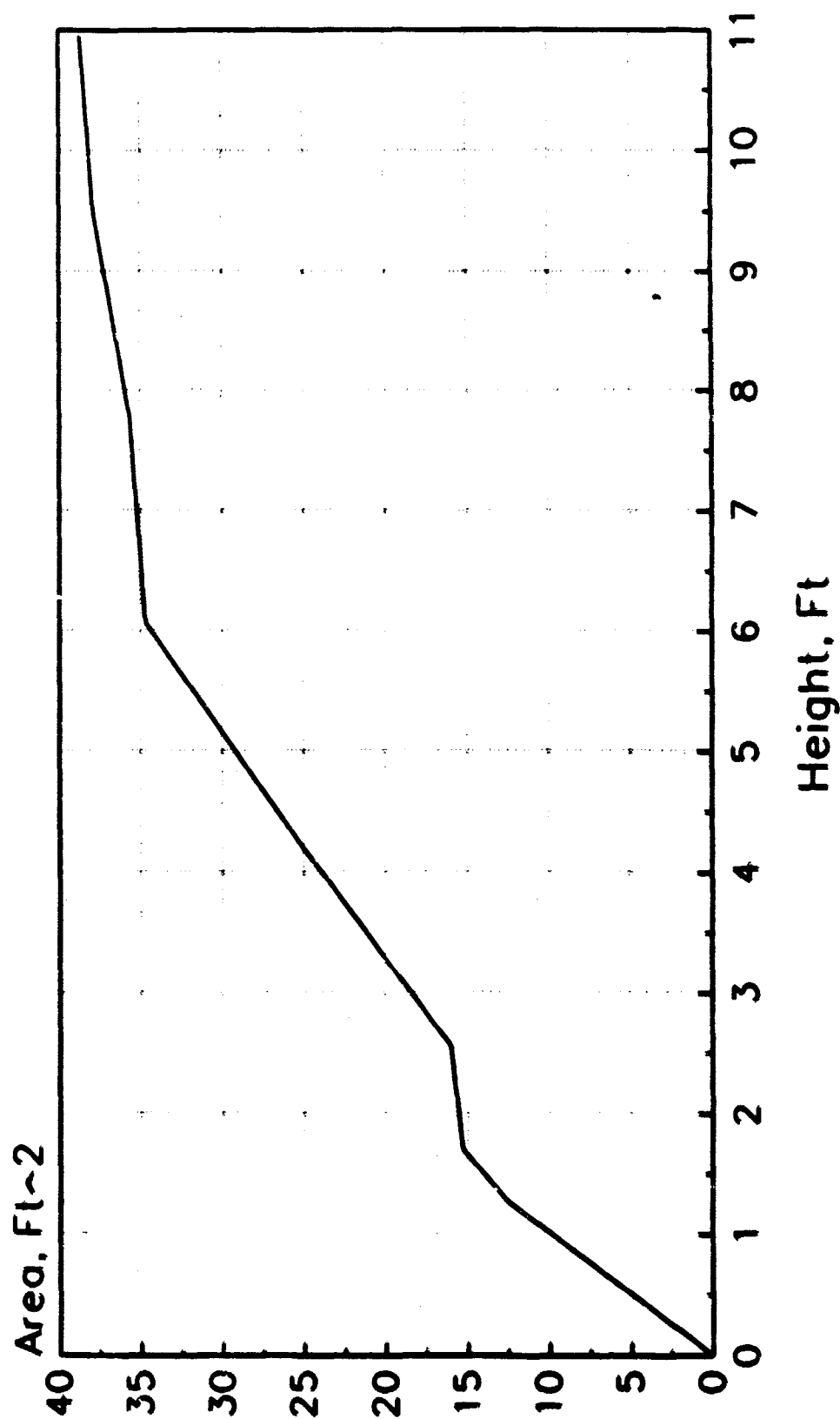
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                           Pharos Marine, Ltd

Drawing Reference:                           England MFG 3-1 & 3-4

BS-3030 (9.8x17 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-3040 (9.8x20 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 13,890 Lbs.

Buoy Draft: 6.56 Ft.

Overall Buoy Length: 20.30 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optionl SR-166 radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.375 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 5.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

5510 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

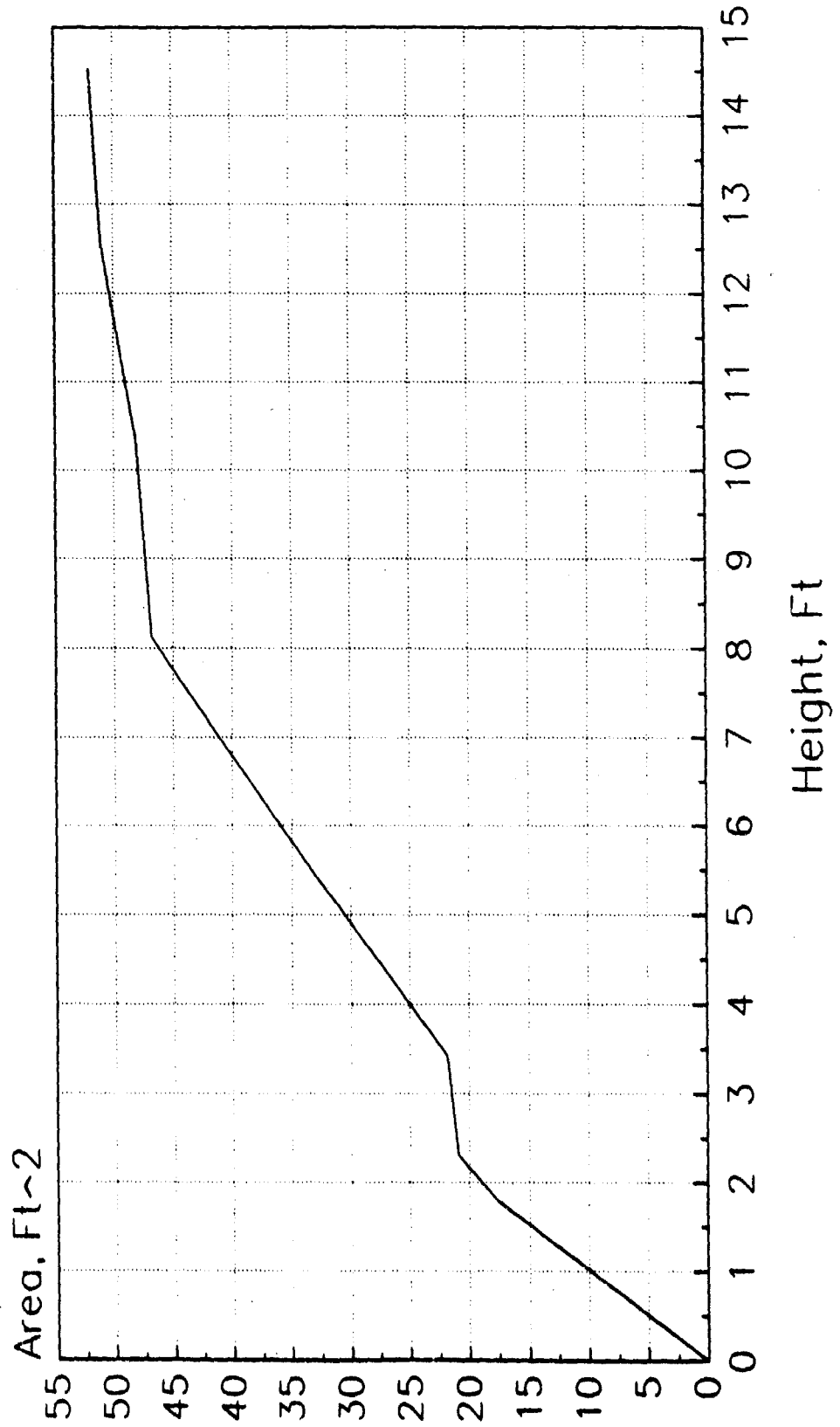
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                            Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-4

BS-3040 (9.8x20 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BS-3050 (9.8x24 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with skirt keel  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 13,910 Lbs.

Buoy Draft: 6.56 Ft.

Overall Buoy Length: 23.50 Ft.

Focal Height of Light: 16.40 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External skirt keel

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.375 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.8 Nmi.

Radar Range: 5.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:         \$0  
                     Monthly Servicing:       \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

5510 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

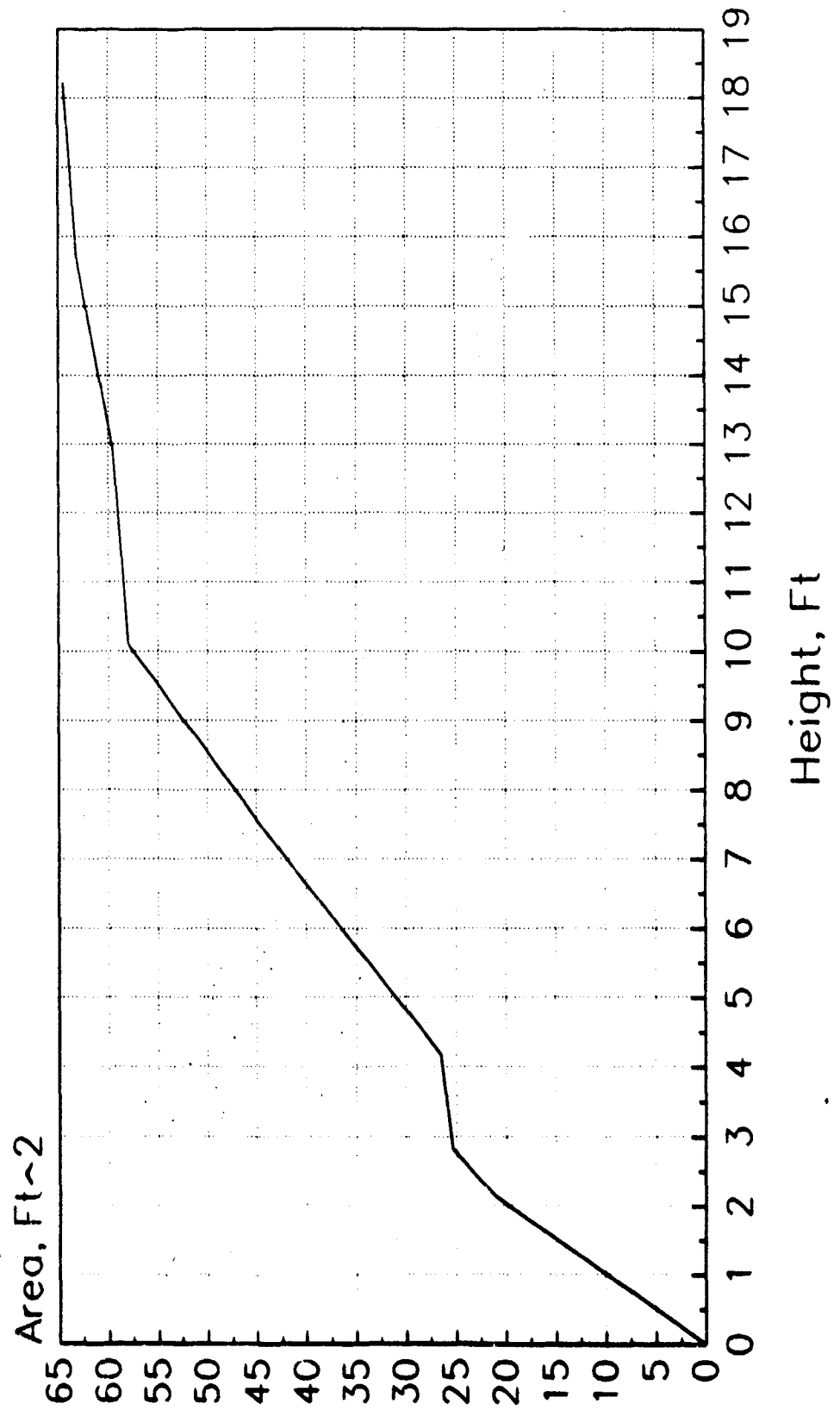
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                              Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-4

# BS-3050 (9.8x24 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BS-41 MKII (7.6x21 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 5,070 Lbs.

Buoy Draft: 6.89 Ft.

Overall Buoy Length: 20.90 Ft.

Focal Height of Light: 13.45 Ft.

Buoy Beam or Diameter: 7.55 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Fiberglass GRP  
Hull Filling : Polyurethane foam  
Tower : Galvanized steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Moulded-in color

Subdivision: Foam filled

Hull Type: Cylindrical

Counterweight Type: External skirt keel

RELATED EQUIPMENT

Number of Power Sources: 48  
Type of Power Sources: PM-1015 Primary bat 1.3v1200Ah  
Lighting Equipment: 155mm electric lantern  
Sound Equipment: none  
Other Payload: SR-166 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.000 In.  
Type: Steel Chain  
Sinker Size: 2,200 Lbs.  
Topmark Type: Various  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.7 Nmi.  
Radar Range: 5.1 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

## Special Features:

Buoy includes a marine grade rubber fender.

## Stability Notes:

## General Notes

1550 lb. maximum mooring weight.

A solar powered option is available.

Radar reflector is omnidirectional.

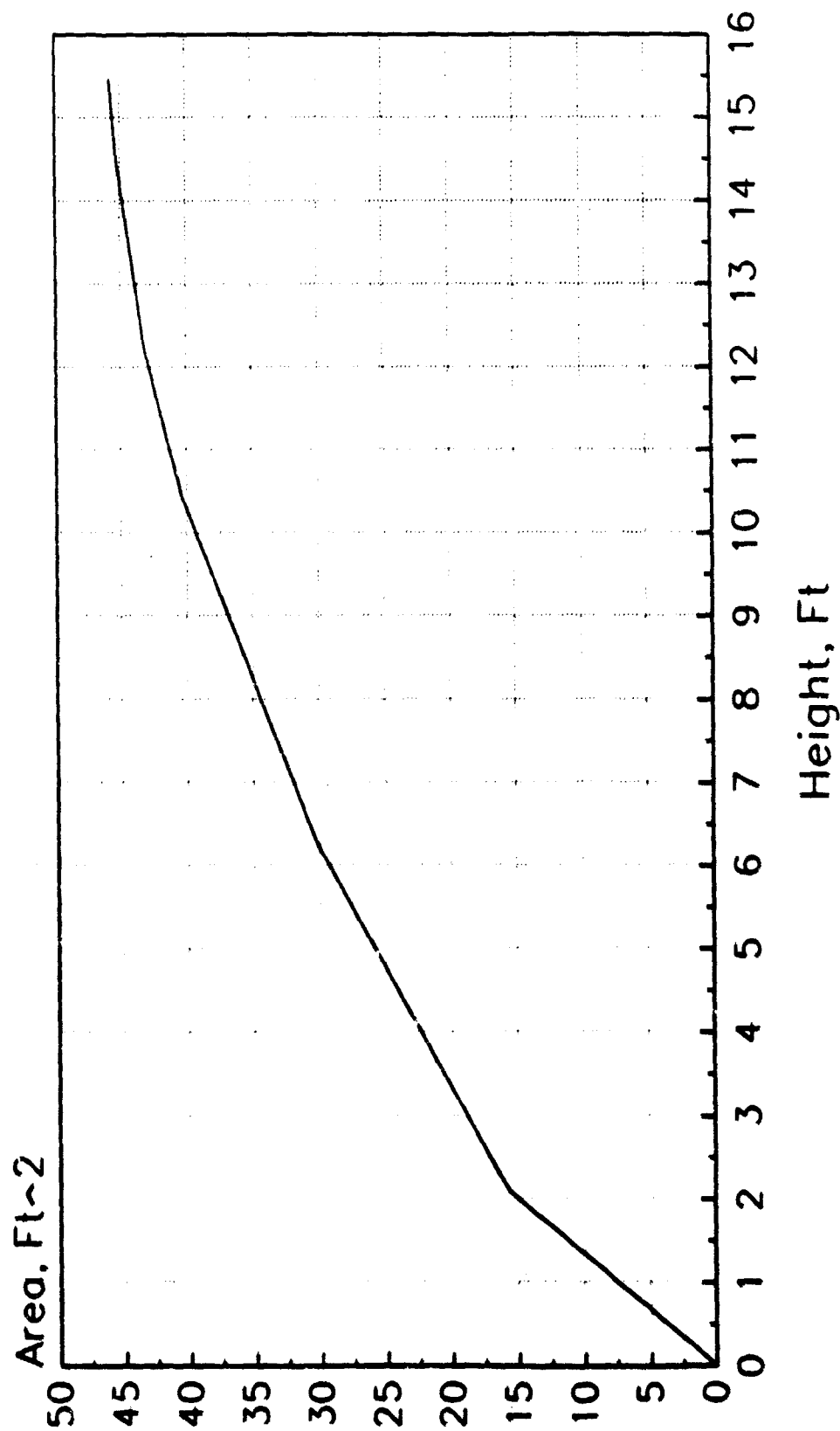
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-3

# BS-41 MKII (7.6x21 LR)

Cumulative Area \_\_\_\_\_





## GENERAL INFORMATION

Name of Buoy: BT-1115 (3.6x10 LR)

Country of Use: England MFG 3

Function: Lighted inshore buoy, with tail tube and  
batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 635 Lbs.

Buoy Draft: 4.59 Ft.

Overall Buoy Length: 10.00 Ft.

Focal Height of Light: 4.92 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 55 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 3mm PL  
Hull Filling :  
Tower : Steel Tube  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Internal tail tube

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: PM-318 Primary batt. 18v 300Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Opt. RBS13.5/20 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.394 In.  
Type: Steel Chain

Sinker Size: 550 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.5 Nmi.

Radar Range: 2.1 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

155 lb. maximum mooring weight.  
A solar powered option is available.

Radar reflector is omnidirectional.

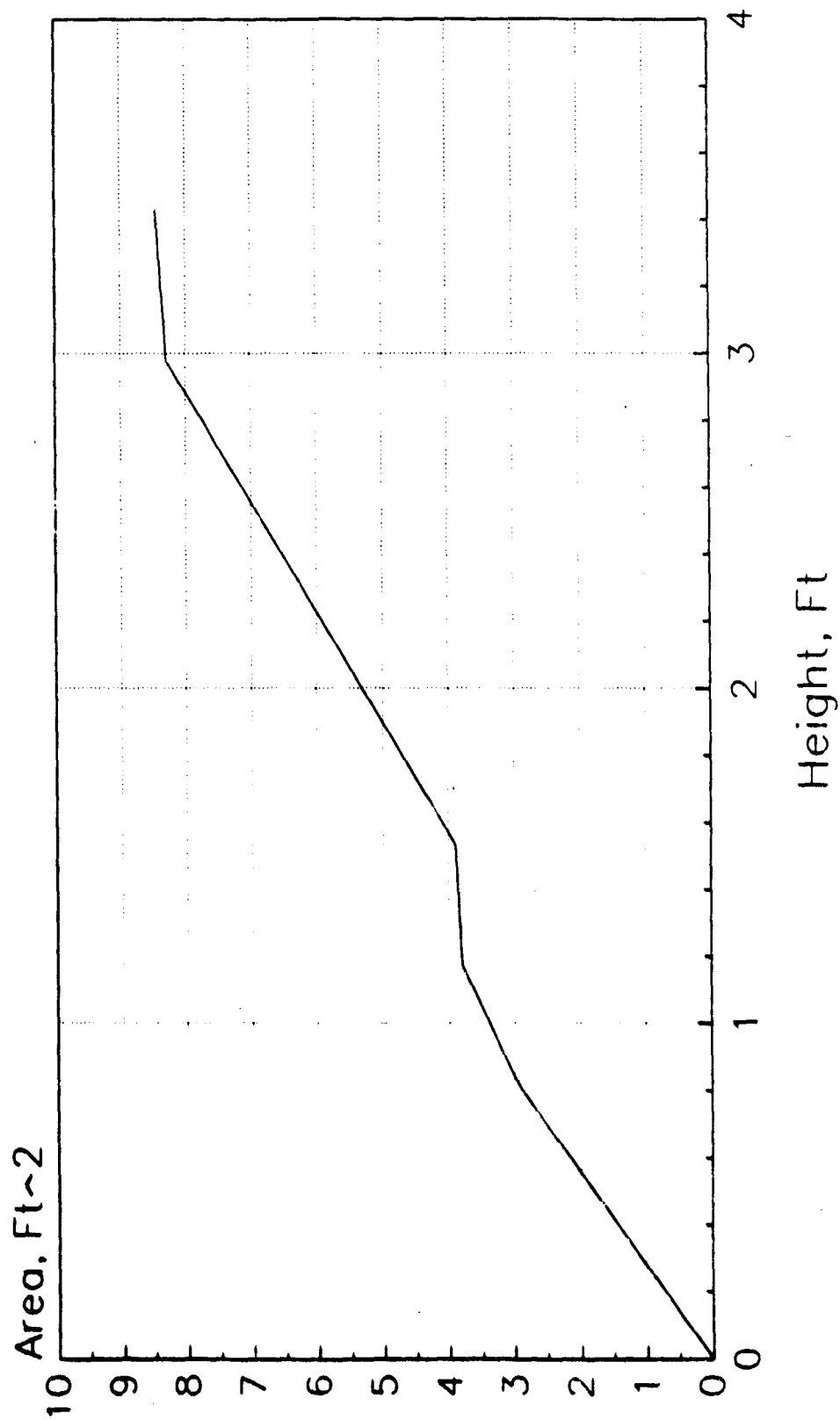
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                              Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-5

BT-1115 (3.6x10 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BT-1125 (3.6x13 LR)

Country of Use: England MFG 3

Function: Lighted inshore buoy, with tail tube and  
batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 645 Lbs.

Buoy Draft: 4.60 Ft.

Overall Buoy Length: 13.30 Ft.

Focal Height of Light: 8.20 Ft.

Buoy Beam or Diameter: 3.61 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 55 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 3mm PL  
Hull Filling :  
Tower : Steel Tube  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: Internal tail tube

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: PM-318 Primary batt. 18v 300Ah

Lighting Equipment: 85mm electric lantern

Sound Equipment: none

Other Payload: Opt. RBS13.5/20 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.394 In.  
Type: Steel Chain

Sinker Size: 550 Lbs.

Topmark Type: none

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 2.0 Nmi.

Radar Range: 2.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

155 lb. maximum mooring weight.  
A solar powered option is available.

Radar reflector is omnidirectional.

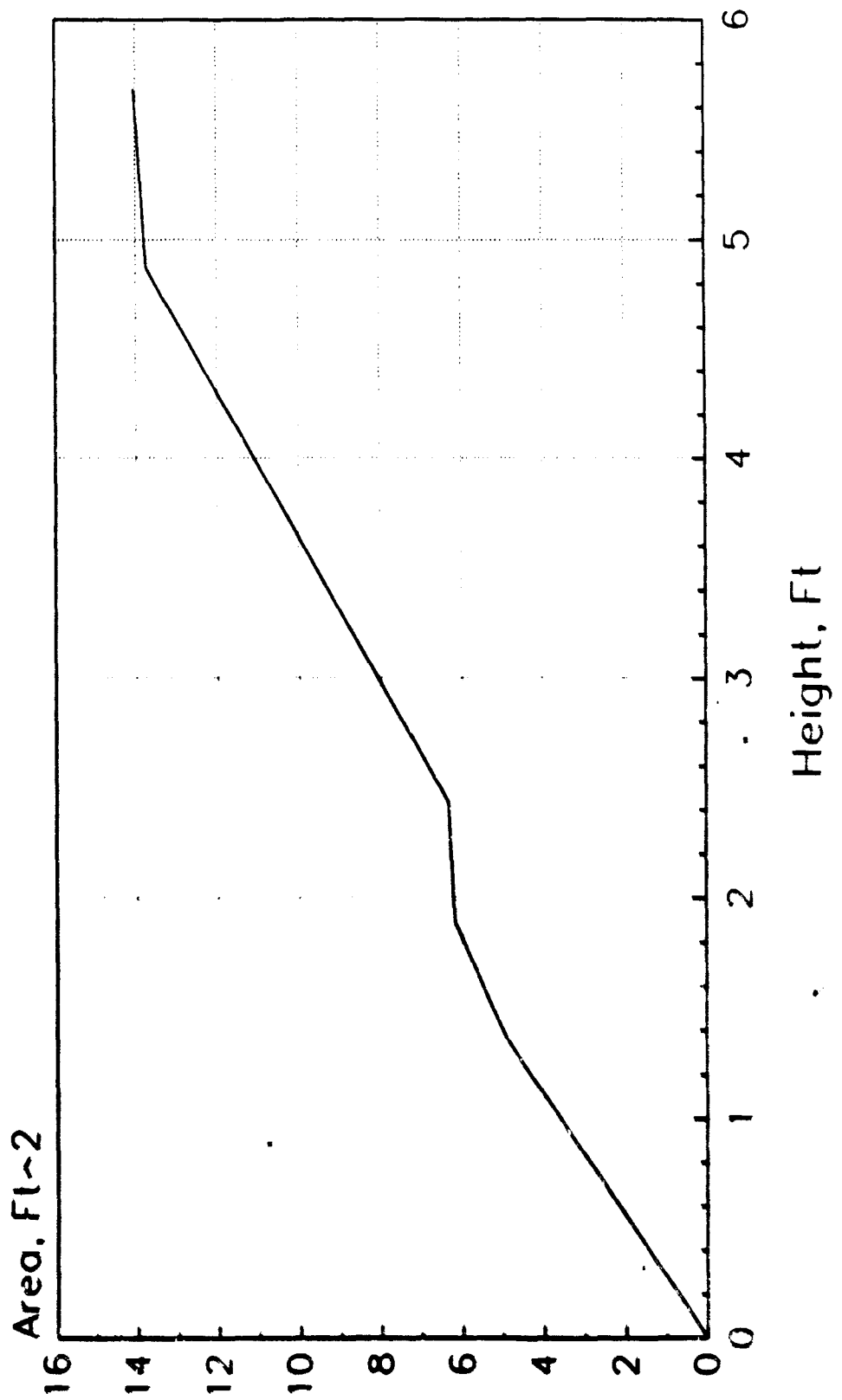
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-5

BT-1125 (3.6x13 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BT-1830 (5.9x23 LR)

Country of Use: England MFG 3

Function: Lighted buoy, with tail tube and batwing  
daymark, for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 5,000 Lbs.

Buoy Draft: 12.45 Ft.

Overall Buoy Length: 22.90 Ft.

Focal Height of Light: 9.84 Ft.

Buoy Beam or Diameter: 5.90 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 146 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 6mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electirc lantern

Sound Equipment: none

Other Payload: Optional SR-164 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 2,210 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 3.8 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

840 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

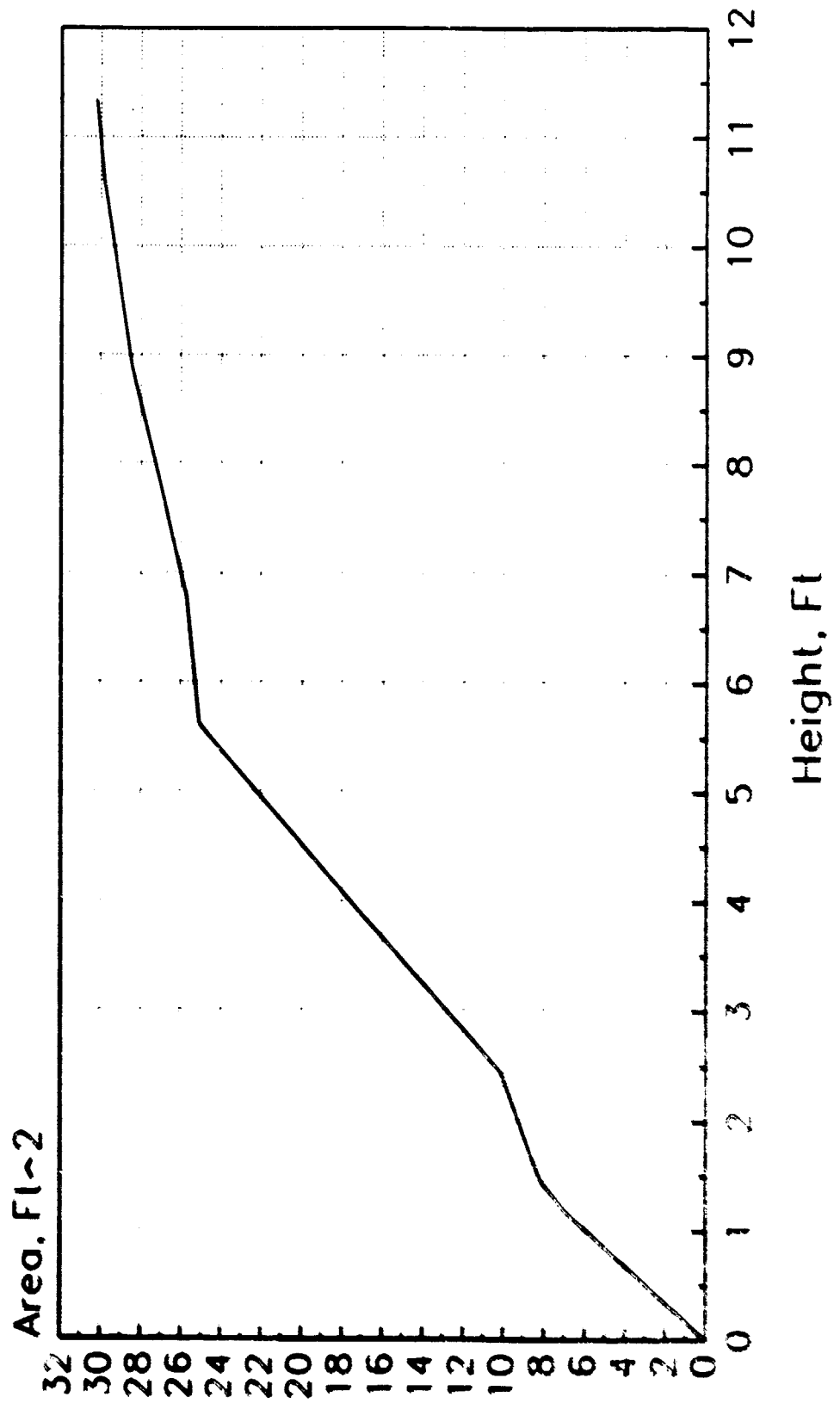
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-5

BT-1830 (5.9x23 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BT-1840 (5.9x26 LR)

Country of Use: England MFG 3

Function: Lighted buoy, with tail tube and batwing  
daymark, for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 5,020 Lbs.

Buoy Draft: 12.47 Ft.

Overall Buoy Length: 26.20 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 5.90 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 146 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 6mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.750 In.  
Type: Steel Chain

Sinker Size: 2,210 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 5.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

840 lb. maximum mooring weight.

A solar powered option is available.

An optional marine grade fender is available.

Radar reflector is omnidirectional.

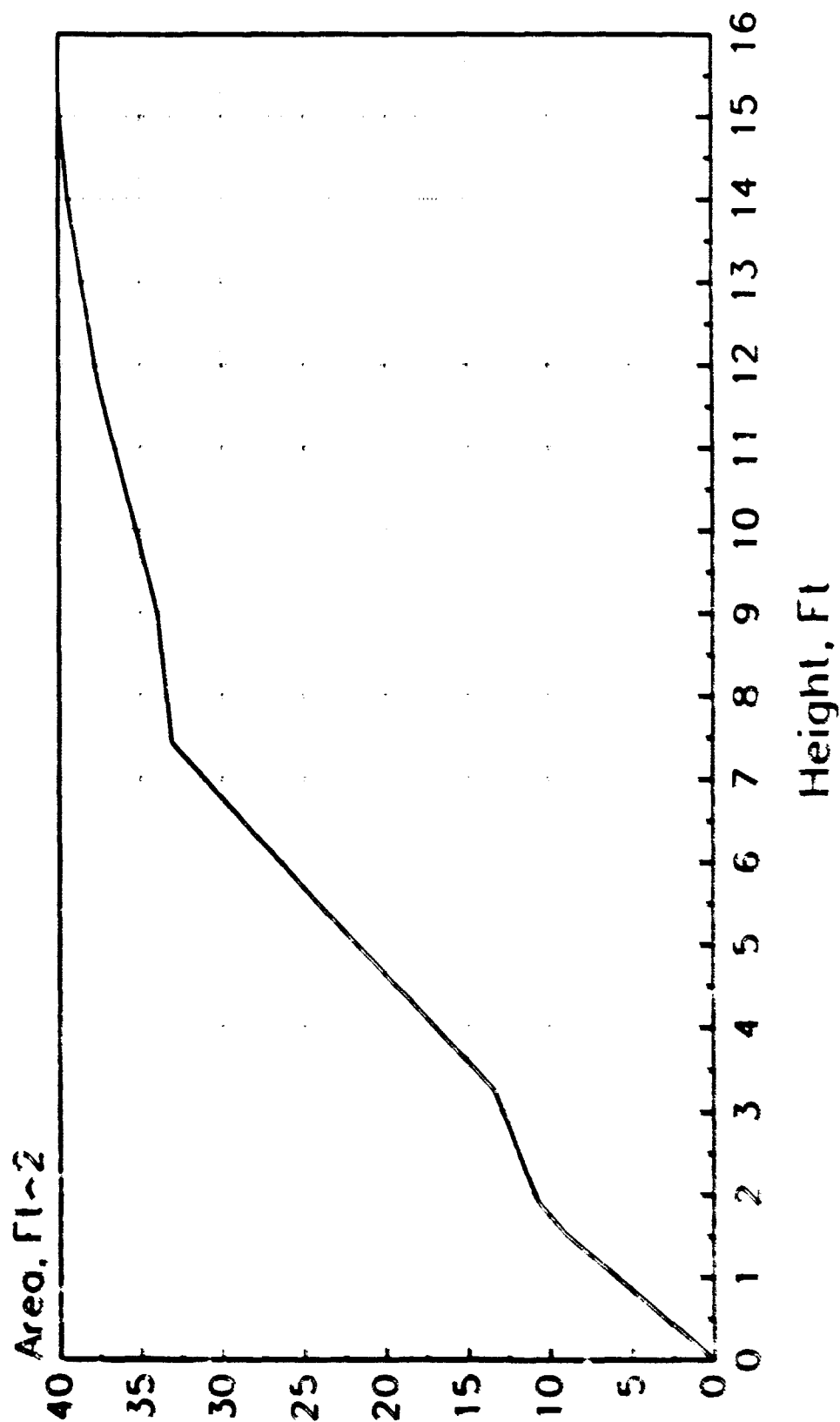
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 63-5

# BT-1840 (5.9x26 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BT-2240 (7.2x25 LR)

Country of Use: England MFG 3

Function: Lighted buoy, with tail tube and batwing  
daymark, for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,710 Lbs.

Buoy Draft: 11.15 Ft.

Overall Buoy Length: 24.90 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 219 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.7 Nmi.

Radar Range: 5.3 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

2430 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

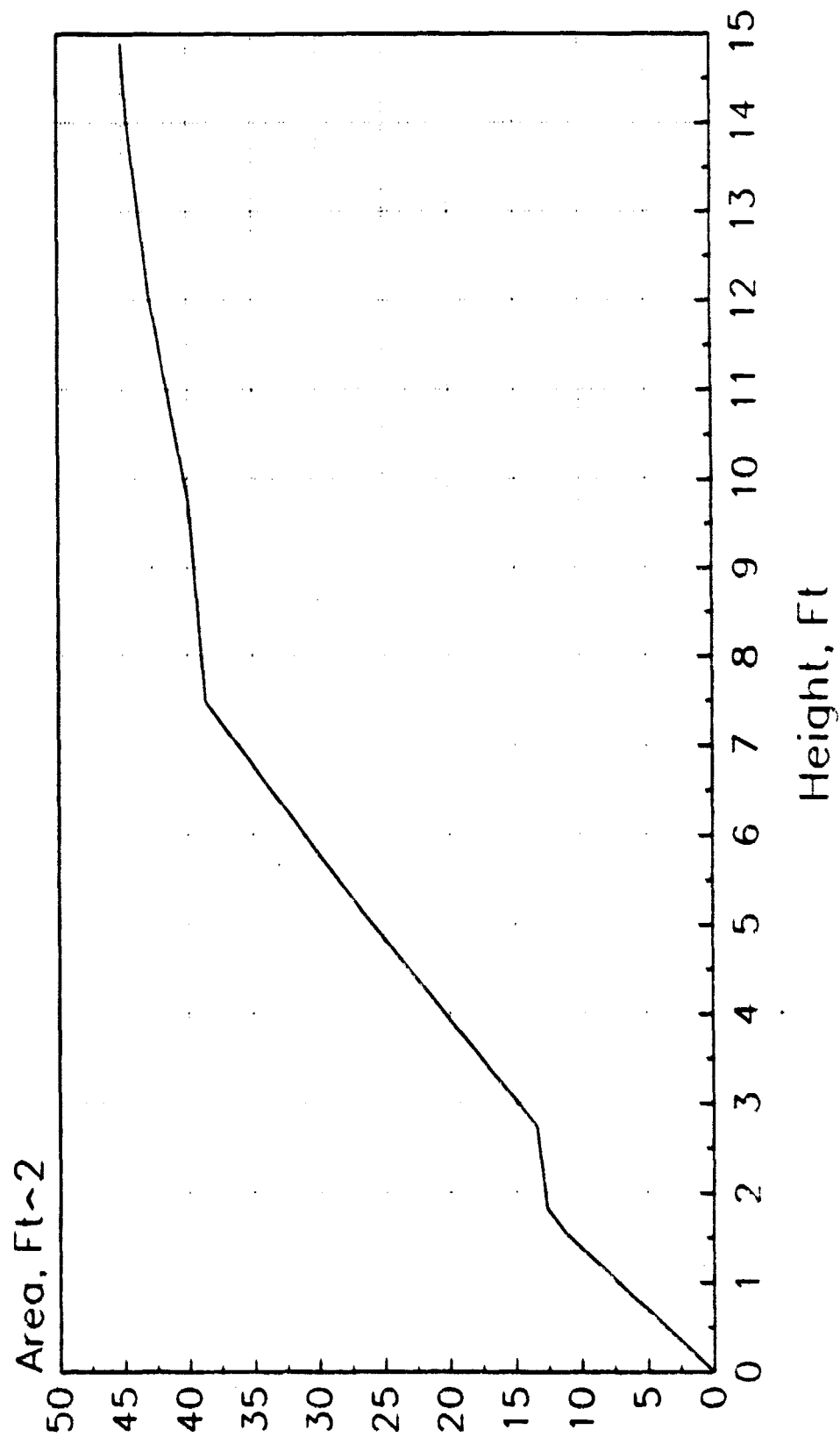
Manufacturers:                            Pharos Marine, Ltd

Source of Design:                           Pharos Marine, Ltd

Drawing Reference:                        England MFG 3-1 & 3-5

BT-2240 (7.2x25 LR)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: BT-2250 (7.2x28 LR)

Country of Use: England MFG 3

Function: Lighted buoy, with tail tube and batwing  
daymark, for semi-protected location.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,730 Lbs.

Buoy Draft: 11.16 Ft.

Overall Buoy Length: 28.20 Ft.

Focal Height of Light: 16.40 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 219 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 primary bat 1.3v4800Ah

Lighting Equipment: 155mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 3,310 Lbs.

Topmark Type: various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.9 Nmi.

Radar Range: 5.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

2430 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

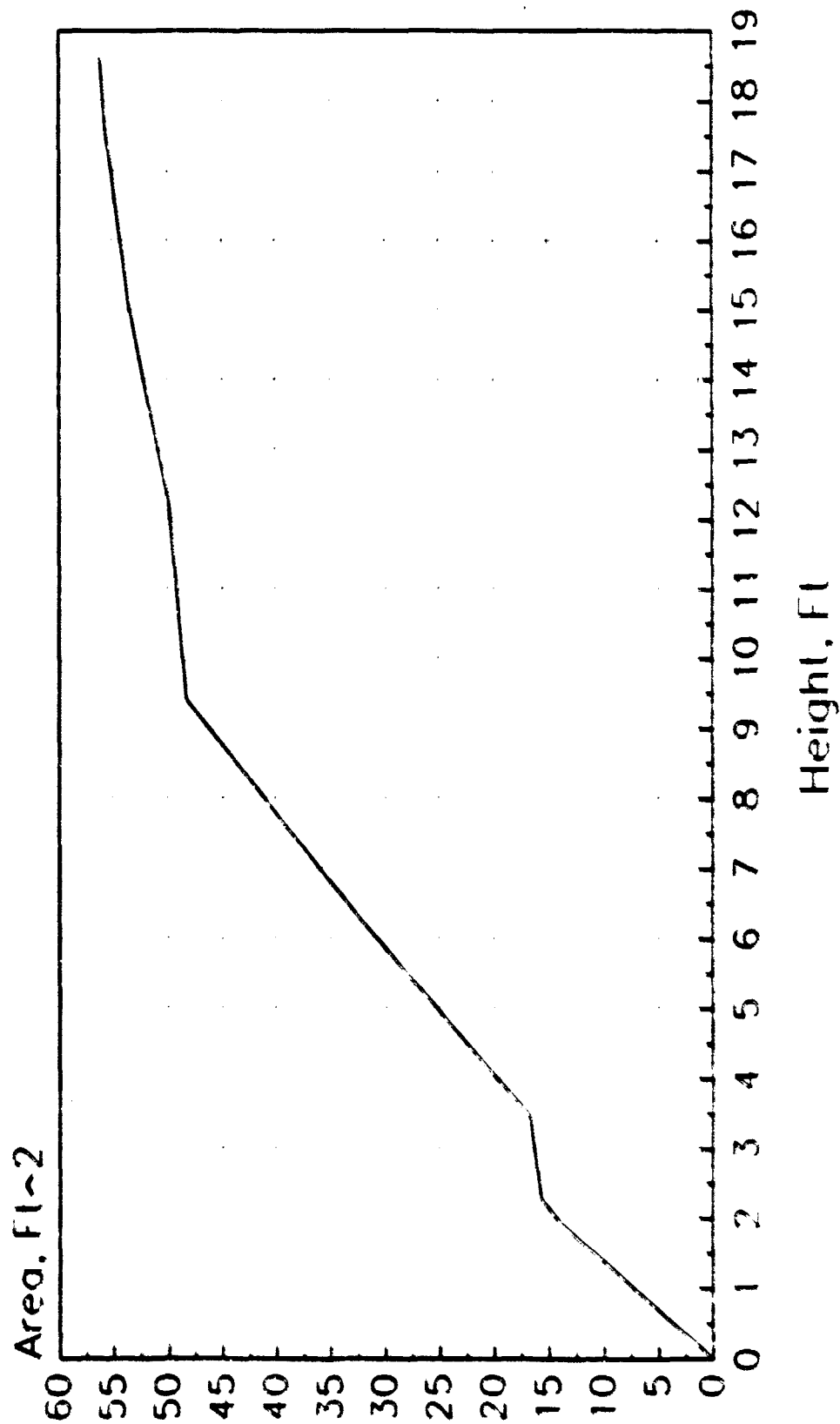
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 63-5

# BT-2250 (7.2x28 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BT-2640 (8.5x25 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,030 Lbs.

Buoy Draft: 11.15 Ft.

Overall Buoy Length: 24.80 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 5.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

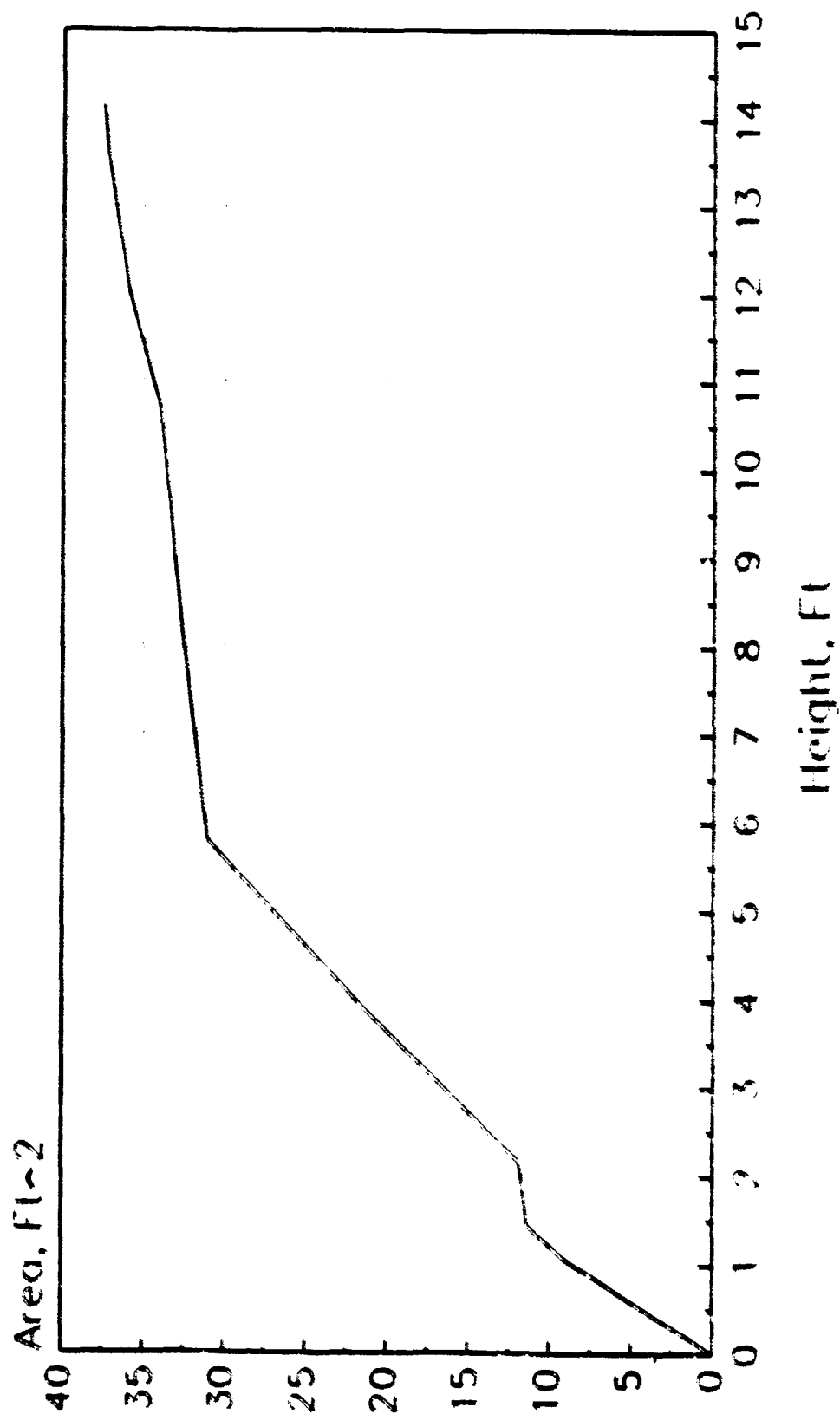
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-5

# BT-2640 (8.5x25 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BT-2650 (8.5x28 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,050 Lbs.

Buoy Draft: 11.16 Ft.

Overall Buoy Length: 28.10 Ft.

Focal Height of Light: 16.40 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.8 Nmi.

Radar Range: 3.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

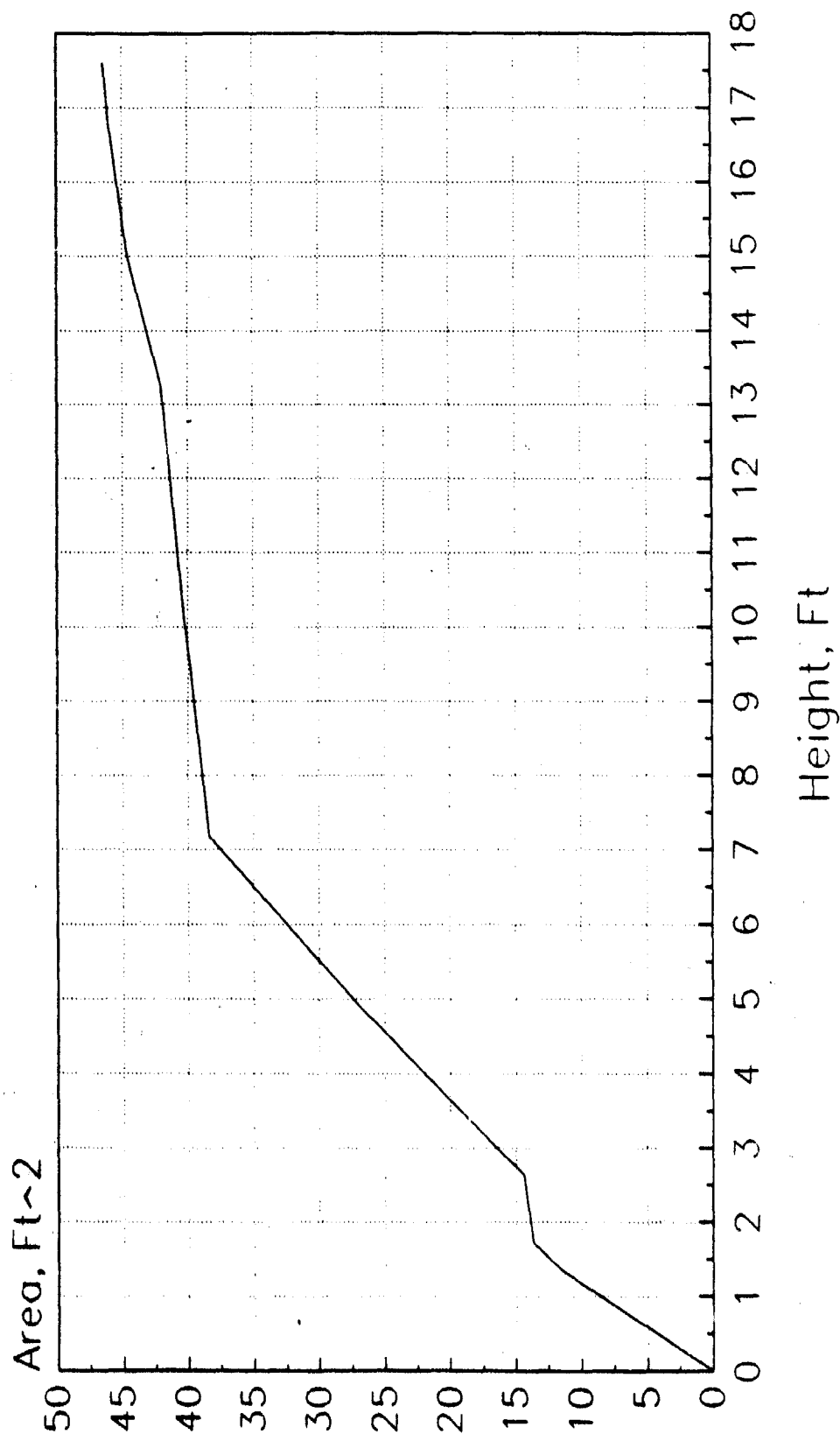
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 63-5

# BT-2650 (8.5x28 LR)

Cumulative Area \_\_\_\_\_





## GENERAL INFORMATION

Name of Buoy: BT-2665 (8.5x35 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 10,140 Lbs.

Buoy Draft: 12.80 Ft.

Overall Buoy Length: 34.70 Ft.

Focal Height of Light: 21.33 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 305 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 4,410 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 6.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

3970 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

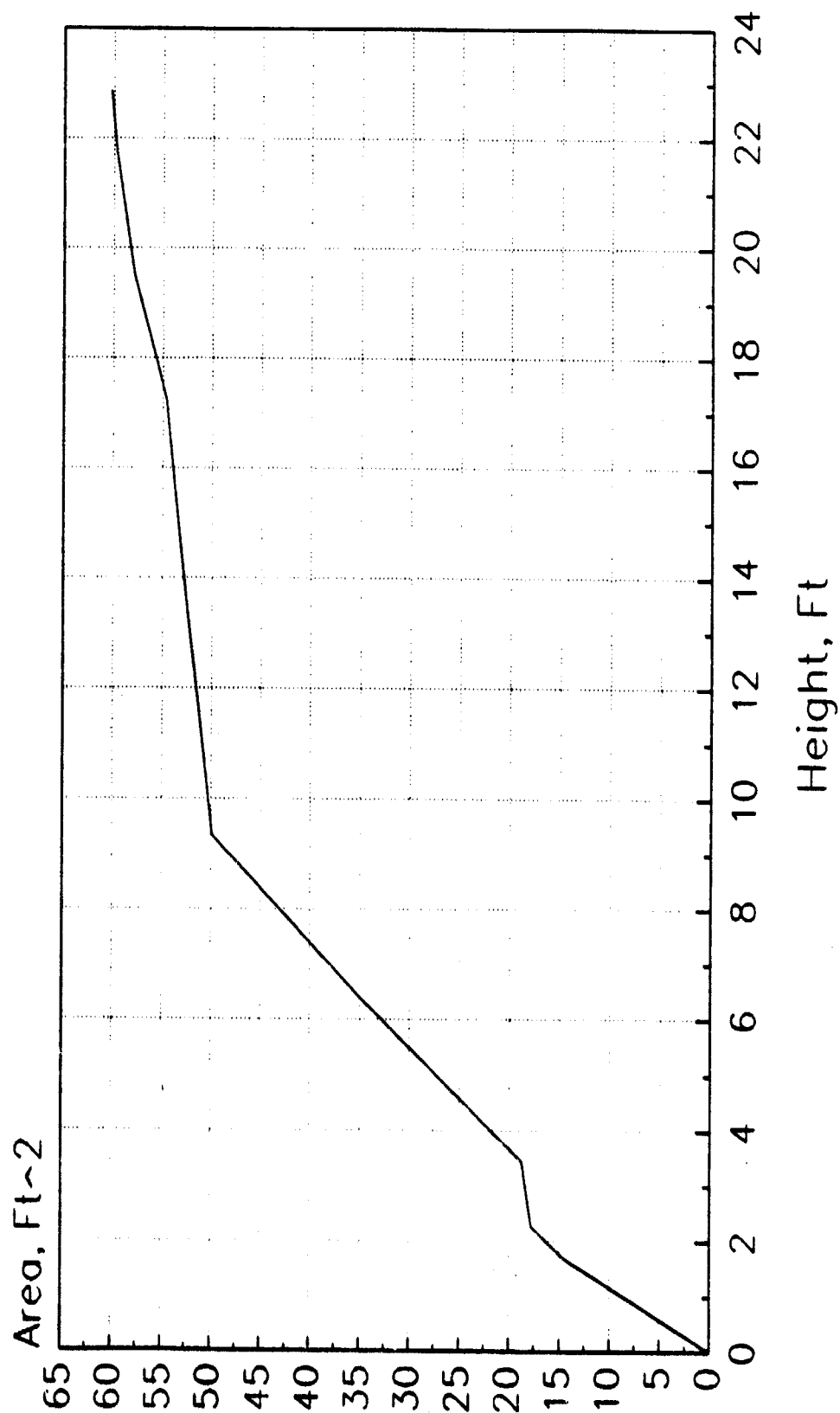
Manufacturers:                    Pharos Marine, Ltd

Source of Design:                Pharos Marine, Ltd

Drawing Reference:                England MFG 3-1 & 3-5

BT-2665 (8.5x35 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BT-3040 (9.8x25 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,010 Lbs.

Buoy Draft: 11.15 Ft.

Overall Buoy Length: 24.80 Ft.

Focal Height of Light: 13.12 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12  
Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah  
Lighting Equipment: 250mm electric lantern  
Sound Equipment: none  
Other Payload: Optionl SR-166 radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.375 In.  
Type: Steel Chain  
Sinkers Size: 6,610 Lbs.  
Topmark Type: Various  
Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.7 Nmi.  
Radar Range: 5.5 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

7060 lb. maximum mooring weight.

A solar powered option is available.

An optional marine grade fender is available.

Radar reflector is omnidirectional.

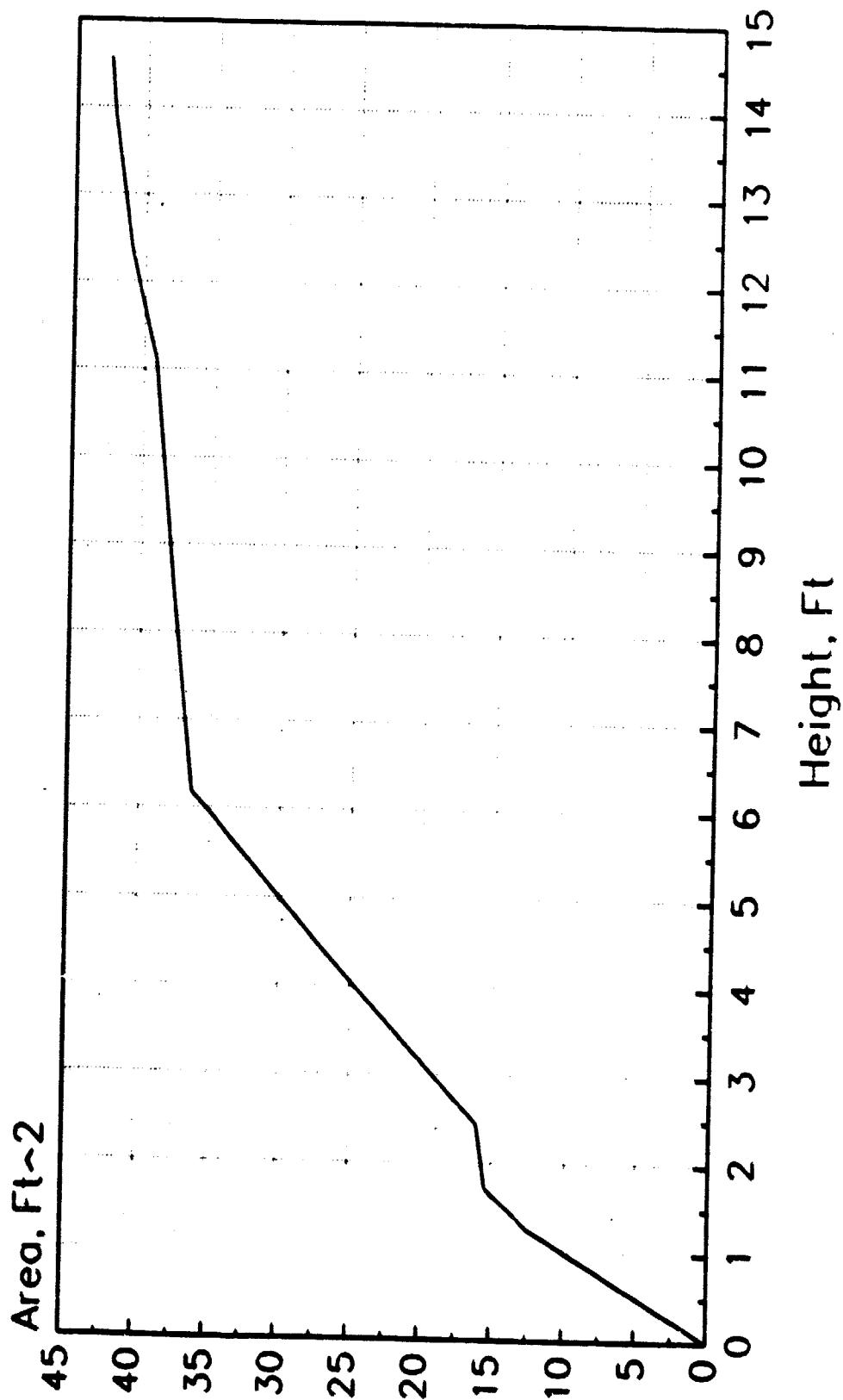
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFG 3-1 & 3-5

BT-3040 (9.8x25 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: BT-3050 (9.8x28 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,030 Lbs.

Buoy Draft: 11.16 Ft.

Overall Buoy Length: 28.10 Ft.

Focal Height of Light: 16.40 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel, 8mm PL  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External Tail Tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.375 In.  
Type: Steel Chain

Sinker Size: 6,610 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.7 Nmi.

Radar Range: 5.9 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

7060 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

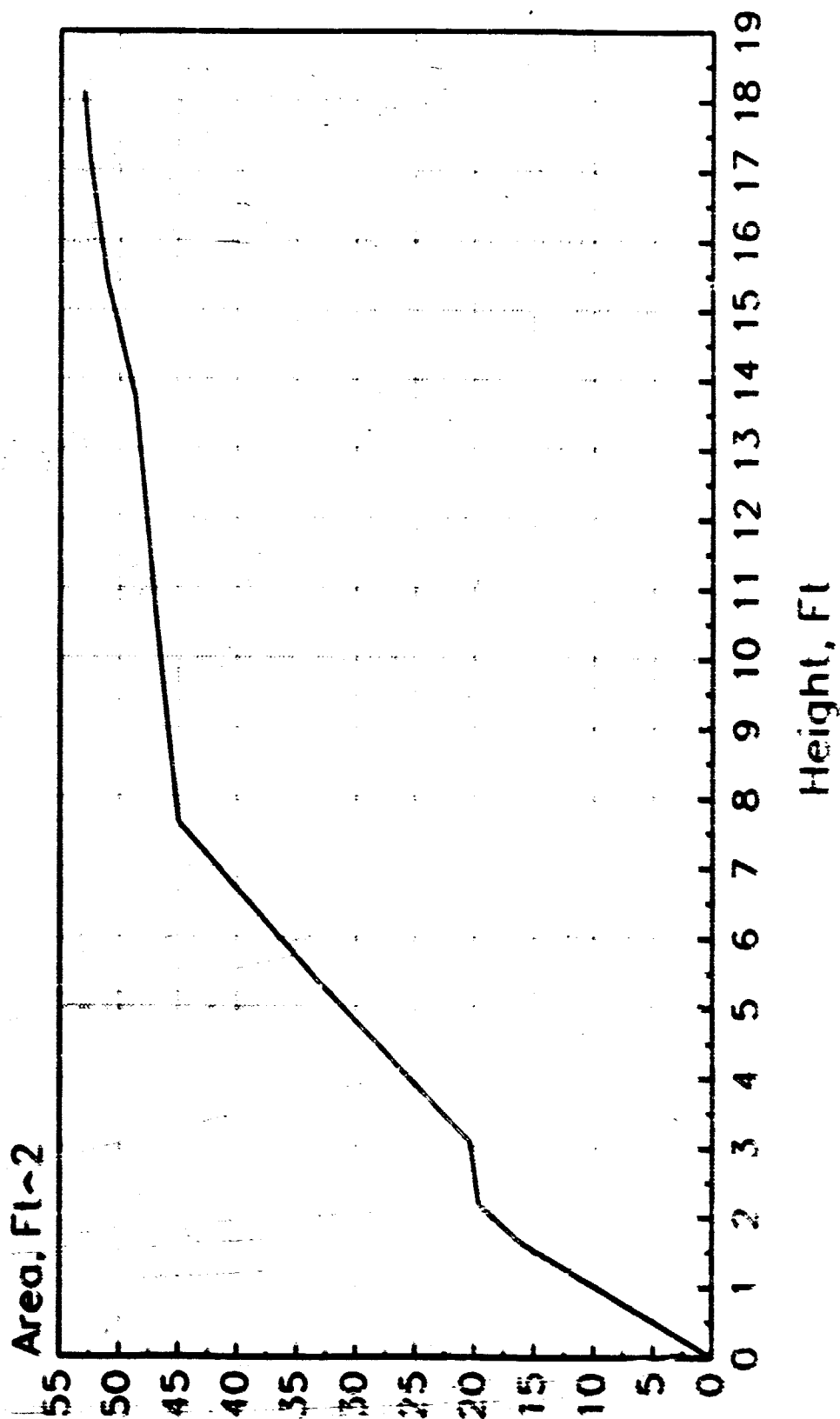
Manufacturers: Pharos Marine, Ltd

Source of Design: Pharos Marine, Ltd

Drawing Reference: England MFC 3-1 & 3-5

# BT-3050 (9.8x28 LR)

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: BT-3065 (9.8x33 LR)

Country of Use: England MFG 3

Function: Lighted offshore buoy, with tail tube  
and batwing daymark.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,050 Lbs.

Buoy Draft: 11.16 Ft.

Overall Buoy Length: 33.00 Ft.

Focal Height of Light: 21.33 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 407 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Steel, 8mm Pl  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical

Counterweight Type: External tail tube

## RELATED EQUIPMENT

Number of Power Sources: 12

Type of Power Sources: PM-4015 Primary bat 1.3v4800Ah

Lighting Equipment: 250mm electric lantern

Sound Equipment: none

Other Payload: Optional SR-166 radar reflectr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.375 In.  
Type: Steel Chain

Sinker Size: 6,610 Lbs.

Topmark Type: Various

Number of Padeyes: 4

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.0 Nmi.

Radar Range: 6.2 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

## General Notes

7060 lb. maximum mooring weight.  
A solar powered option is available.  
An optional marine grade fender is available.  
Radar reflector is omnidirectional.

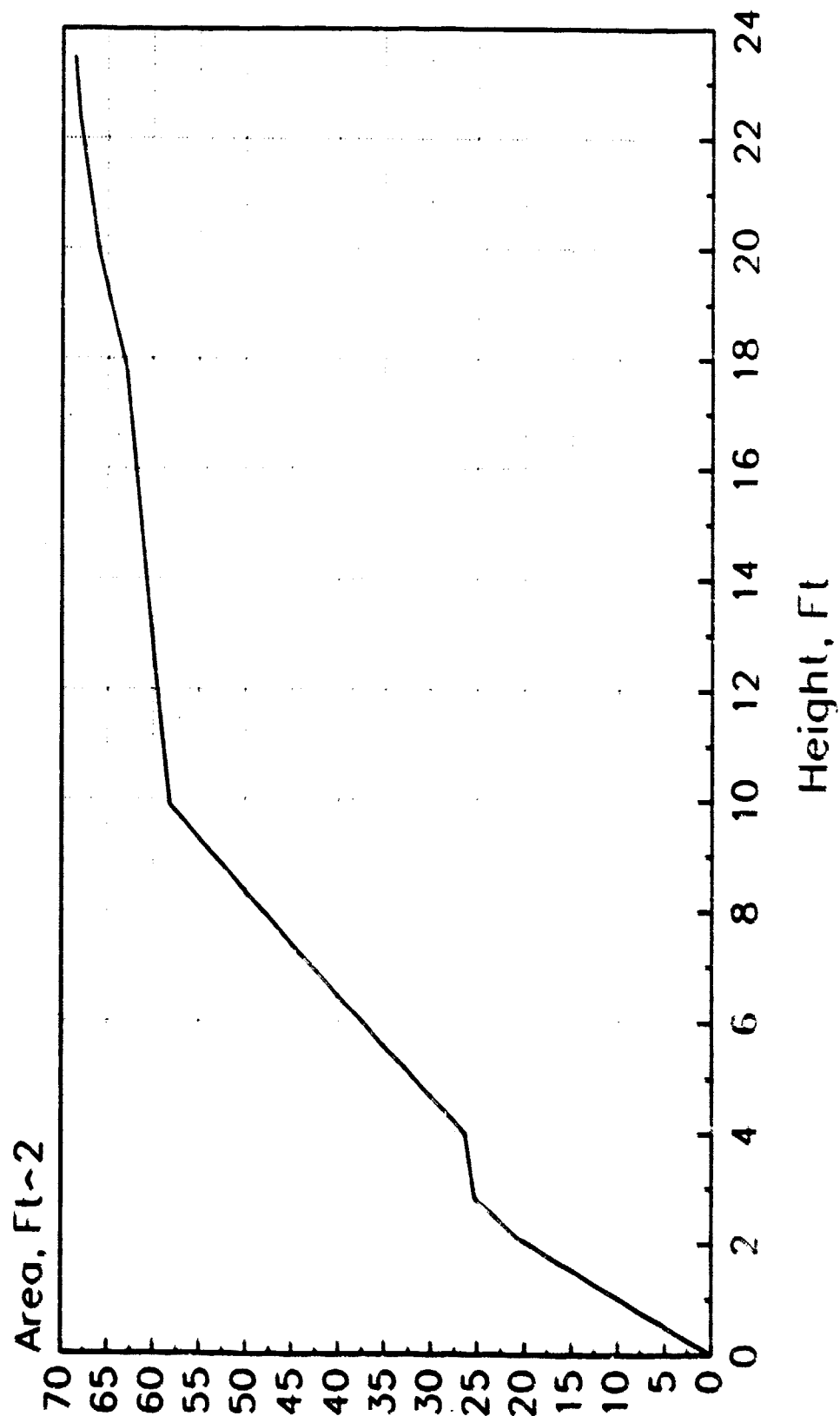
Manufacturers:                                Pharos Marine, Ltd

Source of Design:                              Pharos Marine, Ltd

Drawing Reference:                            England MFG 3-1 & 3-5

BT-3065 (9.8x33 LR)

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: ELASTOMER "SOFT" BUOY

Country of Use: England Mfg-4

Function: A lightweight buoy with light for use as  
a sea buoy by adding a tail tube.

Date Of Last Update For This Record: 01/23/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 0.00 Ft.

Focal Height of Light: 7.38 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard          No Mooring: 0.00 Ft.  
                         Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave following

Construction Material: Hull Shell : Polyureth Elastomer  
Hull Filling : Polyethylene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision:

Hull Type: Cylindrical/conical

Counterweight Type: Cast iron rings

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: Solar panels & battery  
Lighting Equipment:  
Sound Equipment:  
Other Payload: Radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM/SM/PM  
Nominal Visual Range of Daymark: 0.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:        0 Mos.

## Maintenance Notes:

By counter ballasting with extra heavy chain, the chain's service period is extended.

## Special Features:

Polyurethane elastomer can be sprayed or moulded into various densities of polyethylene foam.

## Stability Notes:

The buoy is unsinkable unless severely damaged.

## General Notes

The buoy's draft, overall length and weight will vary depending on the length of tail tube added.

Manufacturers:                    Hippo MarineProducts

Source of Design:                Hippo Marine

Drawing Reference:               England Mfg 4-1

## GENERAL INFORMATION

Name of Buoy: 1.0m x 10m Plastic Pillar

Country of Use: Finland

Function: Lighted pillar buoy with prestressed mooring and built in radar reflector.  
For year-round use in areas of moderate ice action and ice thicknesses less than 30 cm.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 19.70 Ft.

Overall Buoy Length: 33.20 Ft.

Focal Height of Light: 13.50 Ft.

Buoy Beam or Diameter: 3.28 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 13.10 Ft.

Pounds Per Inch Immersion: 45 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: foam filled

Hull Type: cylindrical pillar

Counterweight Type: none

#### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric Batteries

Lighting Equipment: MPV-3 Electric lantern

Sound Equipment: none

Other Payload: SR-6 Radar Reflector, built-in

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 44,100 Lbs.

Topmark Type: none

Number of Padeyes: 0

#### OPERATING CHARACTERISTICS

Operating Environment: SM, ice

Nominal Visual Range of Daymark: 2.8 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 25 Ft.  
Maximum: 0 Ft.

Reflective Material Type: Retroreflecting Number & Strip

ADDITIONAL DATA

Cost: Replacement: \$12,700  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 10.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polythylene.

Special Features:

- Buoy uses prestressed mooring providing exact location.
- Sinker is divided into 4 parts with a conical pin, to allow setting with 12 ton crane.

Stability Notes:

Unstable without mooring.

General Notes

Replaces steel floatant beacon, and wooden archipelago spar.

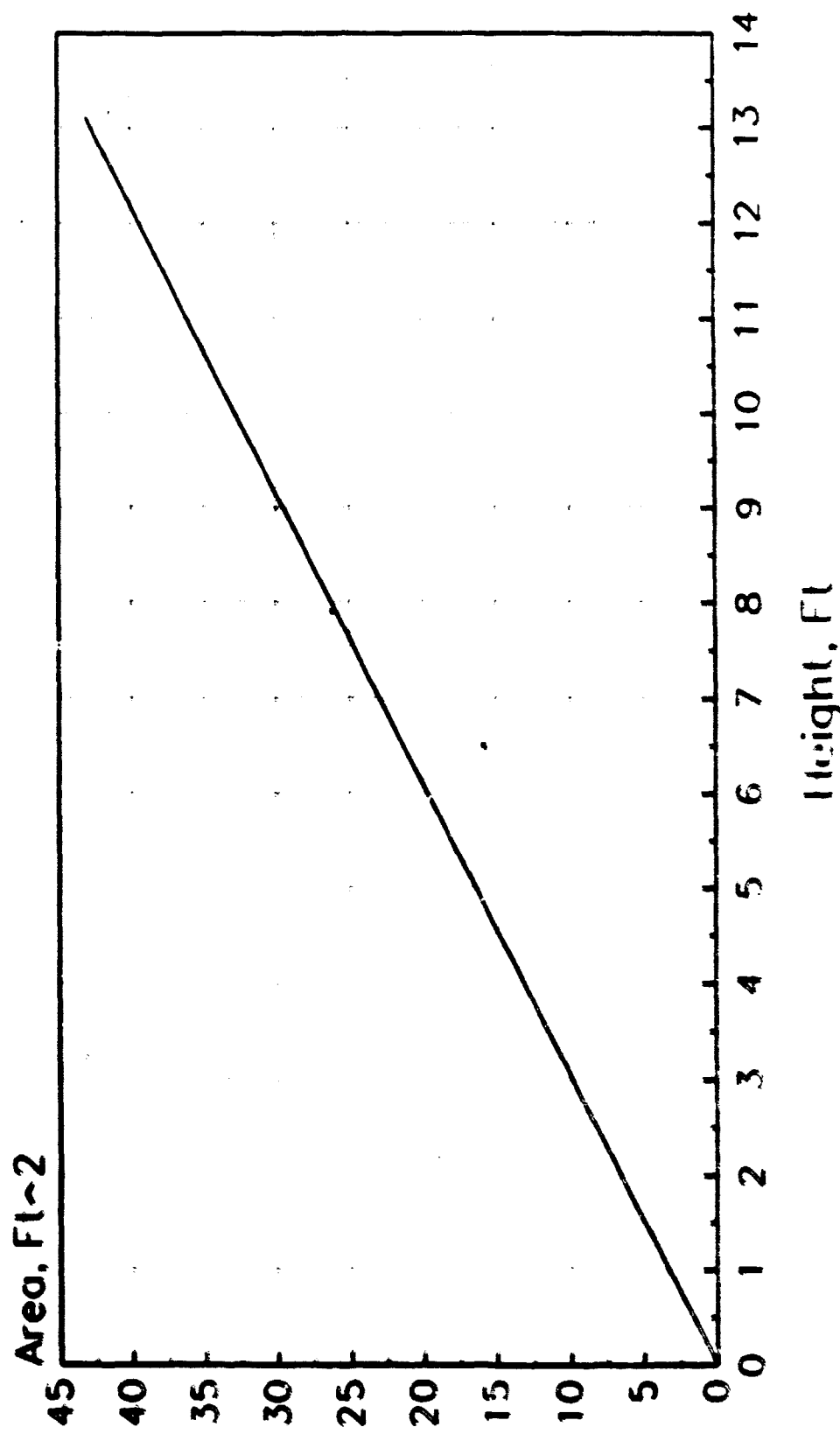
Manufacturers: KWH Pipe

Source of Design: Nat'l Board of Navig

Drawing Reference: Finland 1, 4 & 5

# 1.0m x 10m Plastic Pillar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 1.6m x 14m Plastic Pillar

Country of Use: Finland

Function: Lighted Pillar buoy with prestressed mooring and built-in radar reflector.  
For year-round use in areas of moderate to severe ice action.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 26.25 Ft.

Overall Buoy Length: 45.90 Ft.

Focal Height of Light: 20.10 Ft.

Buoy Beam or Diameter: 5.25 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 19.70 Ft.

Pounds Per Inch Immersion: 115 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Cylindrical Pillar

Counterweight Type: None



### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric Batteries

Lighting Equipment: MPV-3 Electric Lantern

Sound Equipment: None

Other Payload: Radar Reflector, built-in

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.250 In.  
Type: Steel Chain

Sinker Size: 110,250 Lbs.

Topmark Type: None

Number of Padeyes: 0

### OPERATING CHARACTERISTICS

Operating Environment: EM, Ice

Nominal Visual Range of Daymark: 3.7 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 30 Ft.  
Maximum: 0 Ft.

Reflective Material Type: Retroreflecting Number 6 Strip

ADDITIONAL DATA

Cost: Replacement:\$35,700  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 10.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polythylene.

Special Features:

Buoy uses prestressed mooring providing exact location.

Stability Notes:

Unstable without mooring.

General Notes

Replaces wooden offshore spar.

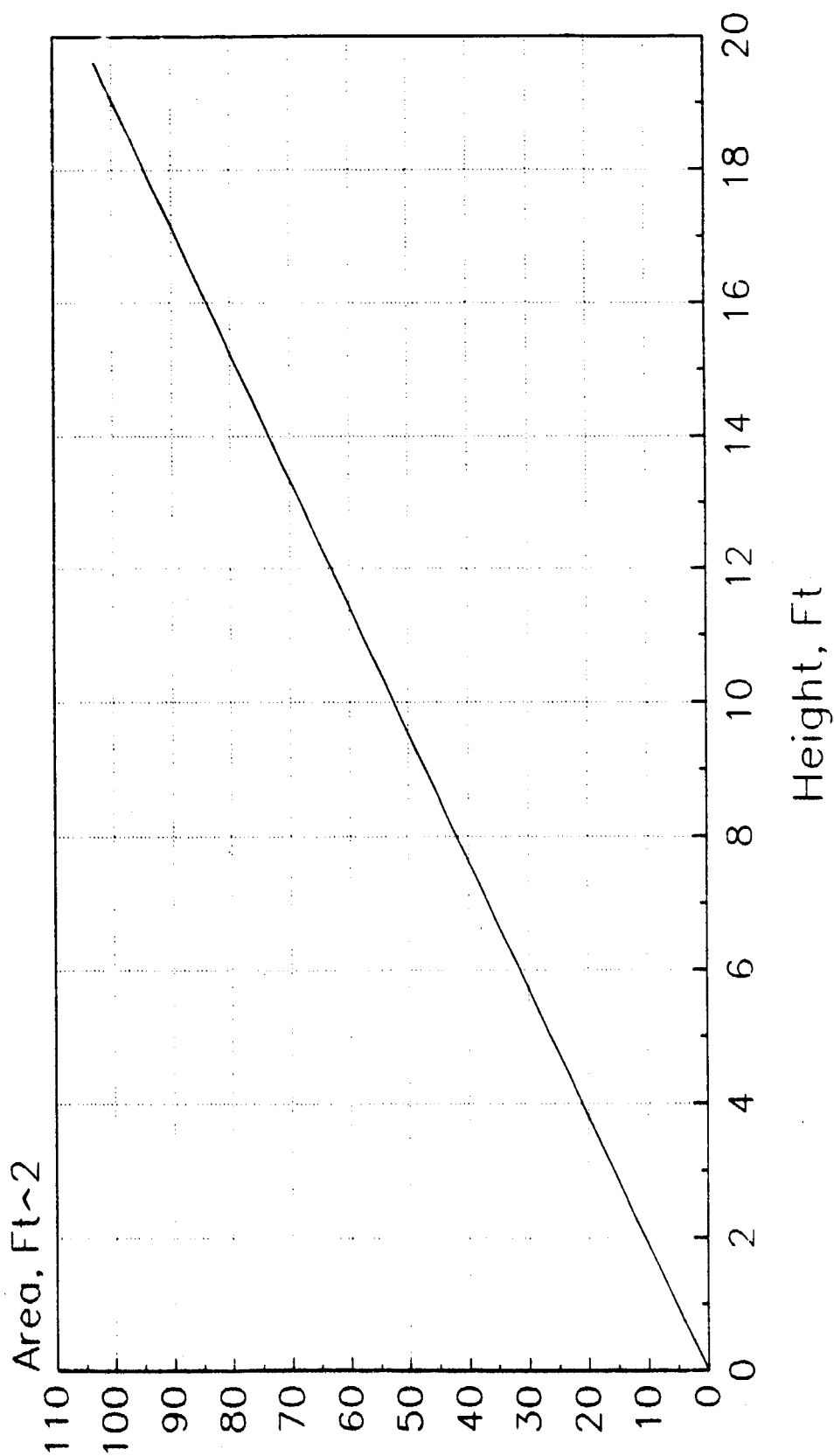
Manufacturers: KWH Pipe

Source of Design: Nat'l Board of Navig

Drawing Reference: Finland 1

# 1.6m x 14m Plastic Pillar

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: 160mm x 6m Plastic Spar

Country of Use: Finland

Function: Unlighted spar buoy, with prestressed mooring, for protected channels.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 58 Lbs.

Buoy Draft: 9.84 Ft.

Overall Buoy Length: 19.68 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 0.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 8.20 Ft.

Pounds Per Inch Immersion: 1 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded in-color, IALA system

Subdivision: Foam Filled

Hull Type: Spar

Counterweight Type: None

#### RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: None

Lighting Equipment: None

Sound Equipment: None

Other Payload: Radar Reflector, built-in

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 2,650 Lbs.

Topmark Type: None

Number of Padeyes: 0

#### OPERATING CHARACTERISTICS

Operating Environment: PM, Ice

Nominal Visual Range of Daymark: 1.3 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 12 Ft.  
Maximum: 0 Ft.

Reflective Material Type: Retroreflective strip(s)

ADDITIONAL DATA

Cost:                    Replacement:     \$450  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                             10.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene.

Special Features:

Buoy uses prestressed mooring providing exact position.  
Retroreflective strips are fixed in milled grooves on top of the spar.

Stability Notes:

Unstable without mooring.

General Notes

Replaces wooden inland spar used earlier in Finland.

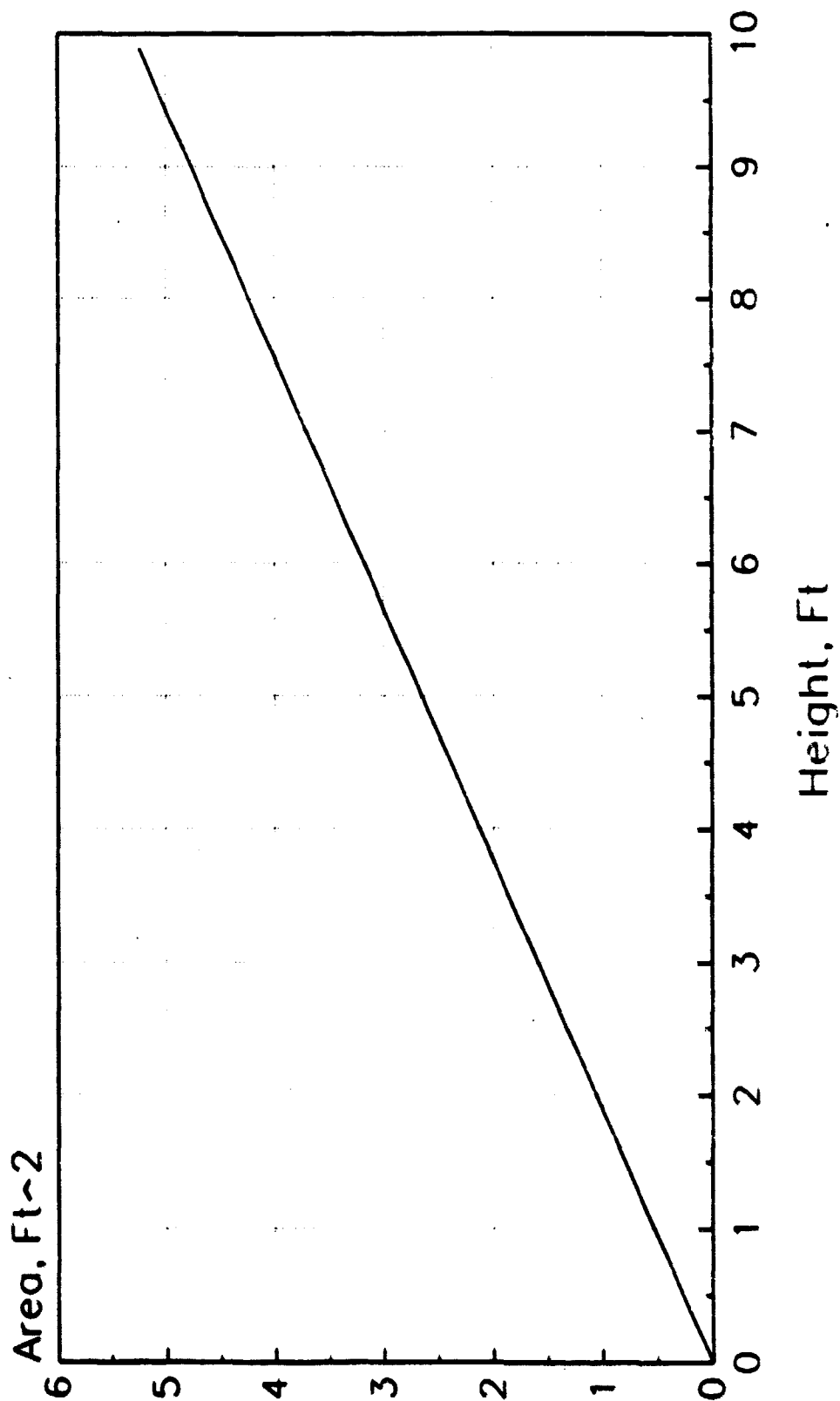
Manufacturers:                             KWH Pipe

Source of Design:                           Nat'l Board of Navig

Drawing Reference:                           Finland 1, 5 & 6

# 160mm x 6m Plastic Spar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 225mm x 6 m Lighted Plast.Spar

Country of Use: Finland

Function: Lighted spar Buoy, with slack mooring,  
for protected channels.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 110 Lbs.

Buoy Draft: 12.80 Ft.

Overall Buoy Length: 20.50 Ft.

Focal Height of Light: 7.50 Ft.

Buoy Beam or Diameter: 0.74 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 7.20 Ft.

Pounds Per Inch Immersion: 2 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp.Polystyrene Foam  
Tower :  
Topmark :  
Counterweight: Electric Battery

Coating/Coloring System: Moulded-in Color, IALA System

Subdivision: Foam Filled

Hull Type: Spar

Counterweight Type: Internal



### RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Battery  
Lighting Equipment: VP-3 Electric Lantern  
Sound Equipment: None  
Other Payload: Radar Reflector, Built-in  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 3,970 Lbs.  
Topmark Type:  
Number of Padeyes: 0

### OPERATING CHARACTERISTICS

Operating Environment: PM, Ice  
Nominal Visual Range of Daymark: 1.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 8 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: Retroreflective Strip(s)

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:    \$0

Service Life:                            10.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene.

Special Features:

Retroreflective strips are fixed in milled grooves on the upper part of spar near the top.

Stability Notes:

General Notes

Replaces wooden inland spar.

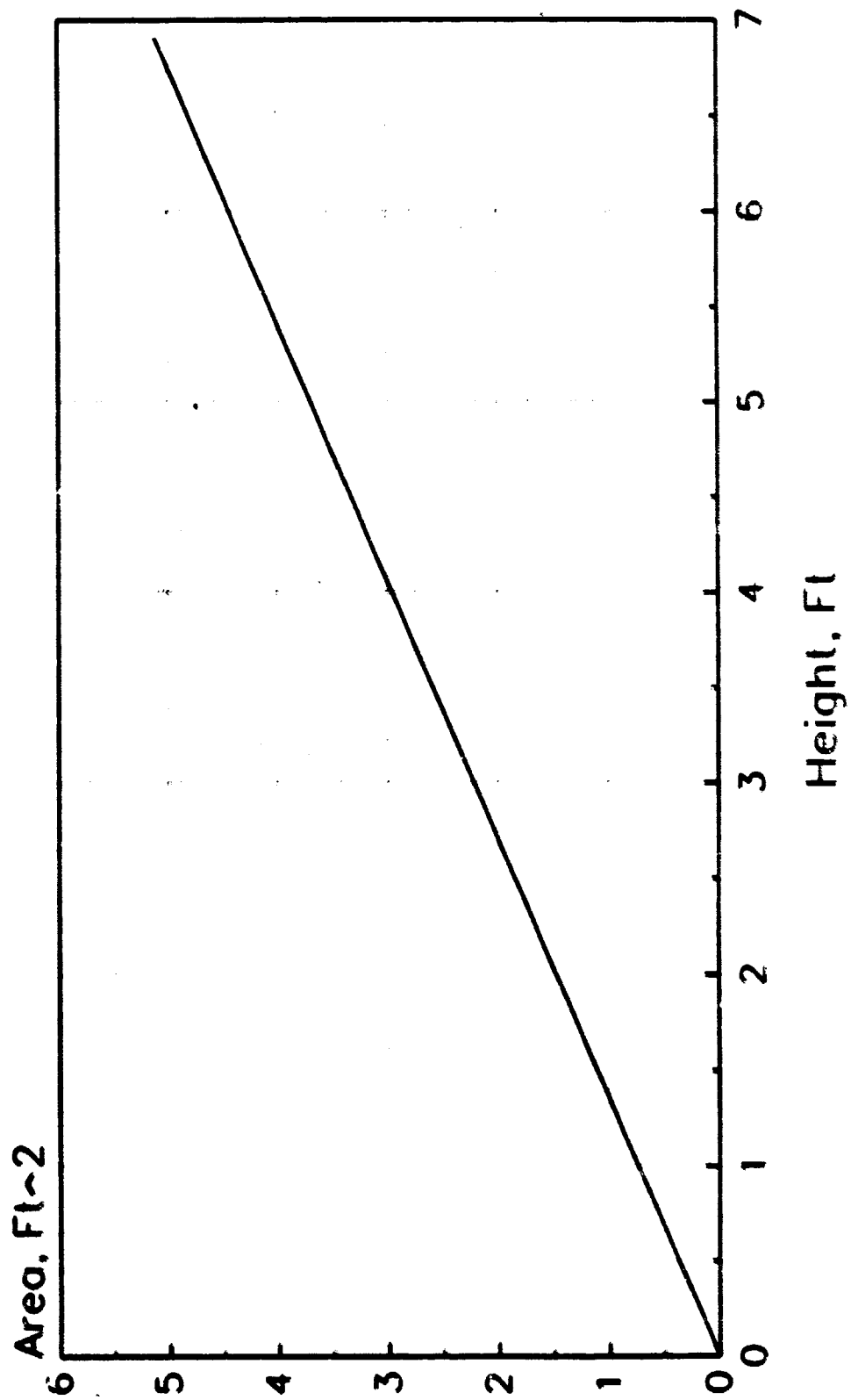
Manufacturers:                            KWH Pipe

Source of Design:                         Nat'l Board of Navig

Drawing Reference:                        Finland 1, 5 & 6

# 225mm x 6m Lighted Plast. Spar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 225mm x 7m Plastic Spar

Country of Use: Finland

Function: Unlighted spar buoy with prestressed  
mooring, for protected channels.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 122 Lbs.

Buoy Draft: 11.50 Ft.

Overall Buoy Length: 23.00 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 0.74 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 11.50 Ft.

Pounds Per Inch Immersion: 2 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: Foam filled

Hull Type: Spar

Counterweight Type: None

#### RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: none  
Lighting Equipment: none  
Sound Equipment: none  
Other Payload: built-in radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 3,970 Lbs.  
Topmark Type: none  
Number of Padeyes: 0

#### OPERATING CHARACTERISTICS

Operating Environment: PM, Ice  
Nominal Visual Range of Daymark: 1.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 15 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: Retroreflective Strip(s)

ADDITIONAL DATA

Cost:                    Replacement:    \$655  
                         Preparation:        \$0  
         Monthly Servicing:    \$0

Service Life:                    10.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene.

Special Features:

Buoy uses prestressed mooring providing exact location.  
Retroreflective strips are fixed in milled grooves on the top part of spar.

Stability Notes:

Replaces wooden inland spar.

General Notes

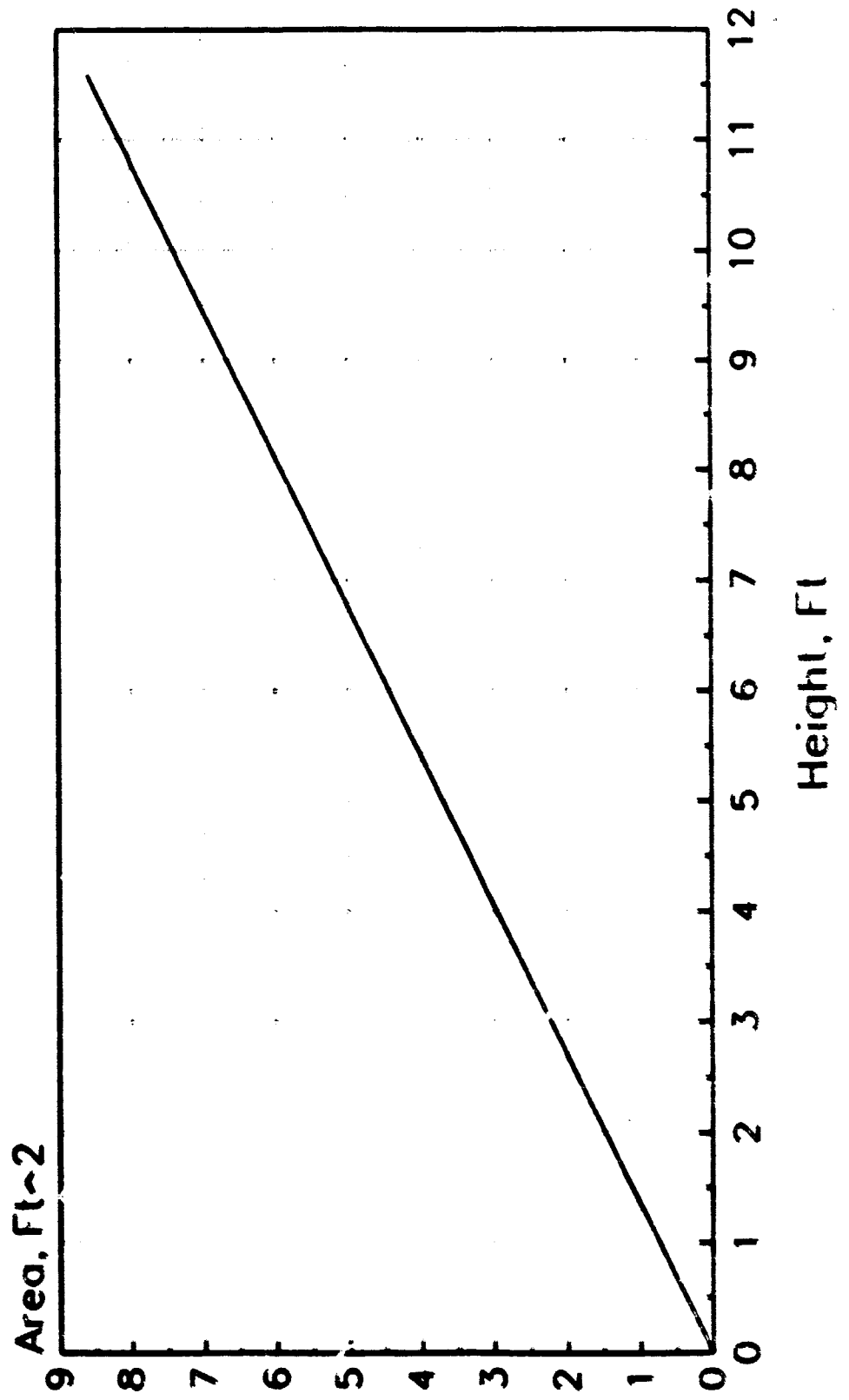
Manufacturers:                    KWH Pipe

Source of Design:                Nat'l Board of Navig

Drawing Reference:               Finland 1, 5 & 6

# 225mm x 7m Plastic Spar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 3m x 17m Steel Ice Buoy

Country of Use: Finland

Function: Steel lighted buoy for exposed locations  
with severe ice action.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 36.50 Ft.

Overall Buoy Length: 56.30 Ft.

Focal Height of Light: 19.90 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 19.70 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System: Epoxy 500mg Th, IALA colors

Subdivision: Three Compartment

Hull Type: Cylindrical, Tapered

Counterweight Type: External Ring, Vari



### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Electric Battery Pack

Lighting Equipment: MPV-3 Electric Lantern

Sound Equipment: None

Other Payload: Radar Reflector, built-in

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Steel Chain

Sinker Size: 134,400 Lbs.

Topmark Type: None

Number of Padeyes: 0

### OPERATING CHARACTERISTICS

Operating Environment: EM, Ice

Nominal Visual Range of Daymark: 4.2 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 37 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

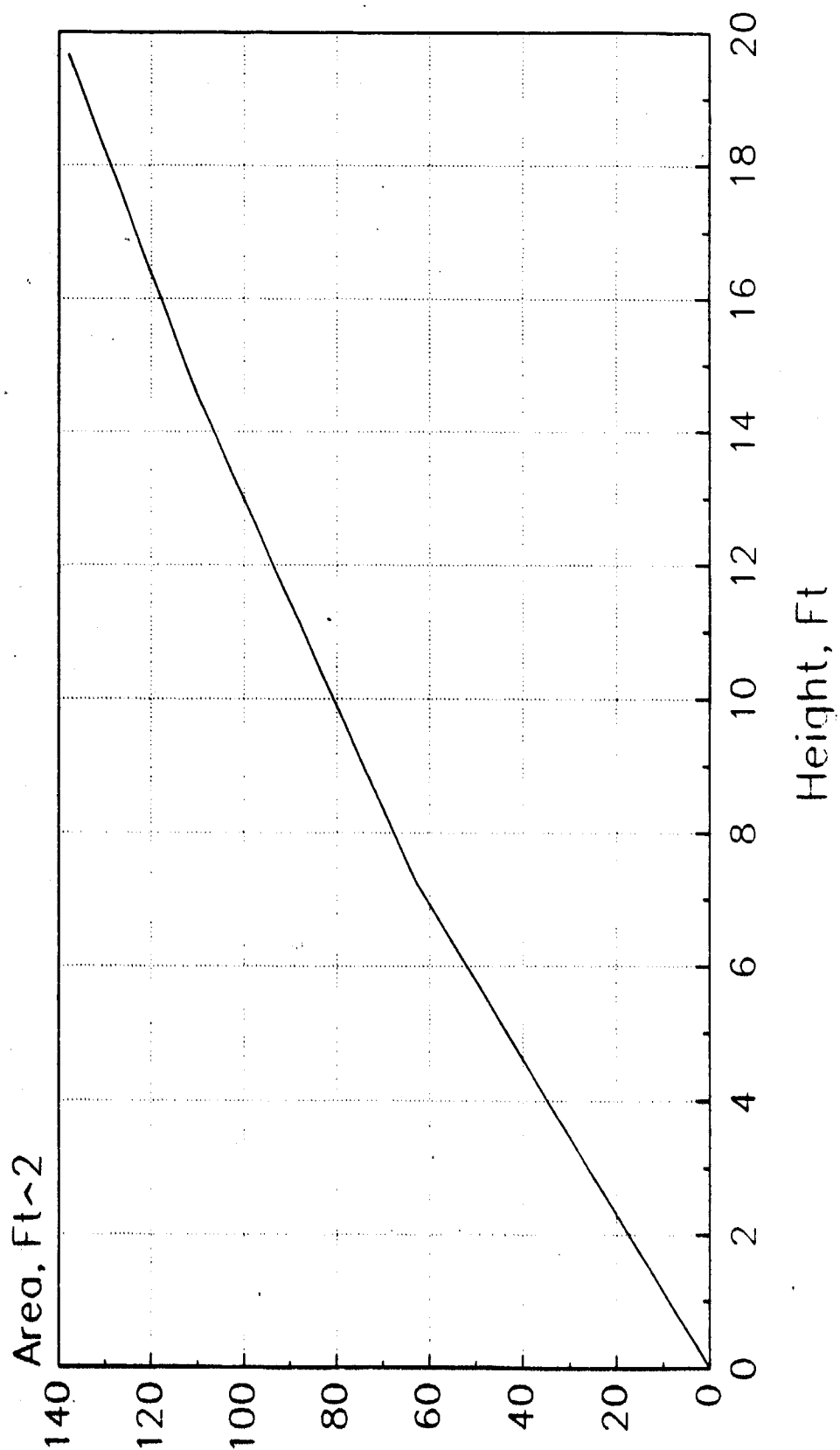
Manufacturers:

Source of Design: Nat'l Board of Navig

Drawing Reference: Finland 1

# 3m x 17m Steel Ice Buoy

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 50/120 Plastic Spar Unlighted

Country of Use: Finland

Function: Unlighted spar buoy, with prestressed  
mooring, for protected yachting  
channels and low water depth.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 4.25 Ft.

Overall Buoy Length: 9.85 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 0.36 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 5.60 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in Color, IALA System

Subdivision: Foam Filled

Hull Type: Spar

Counterweight Type: None

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources: None  
Lighting Equipment: None  
Sound Equipment: None  
Other Payload: None  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Polypropylene Rope  
Sinkers Size: 220 Lbs.  
Topmark Type: None  
Number of Padeyes: 0

OPERATING CHARACTERISTICS

Operating Environment: PM, Ice  
Nominal Visual Range of Daymark: 0.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: Retroreflective strips

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            10.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene.

Special Features:

Buoy uses prestressed mooring providing an exact position.

Stability Notes:

Unstable without mooring.

General Notes

Replaces wooden inshore spar. Top part of buoy is of 50mm. (approx. 2 inch.) diameter, and the bottom floating part is 120mm (approx. 4.72 inch).

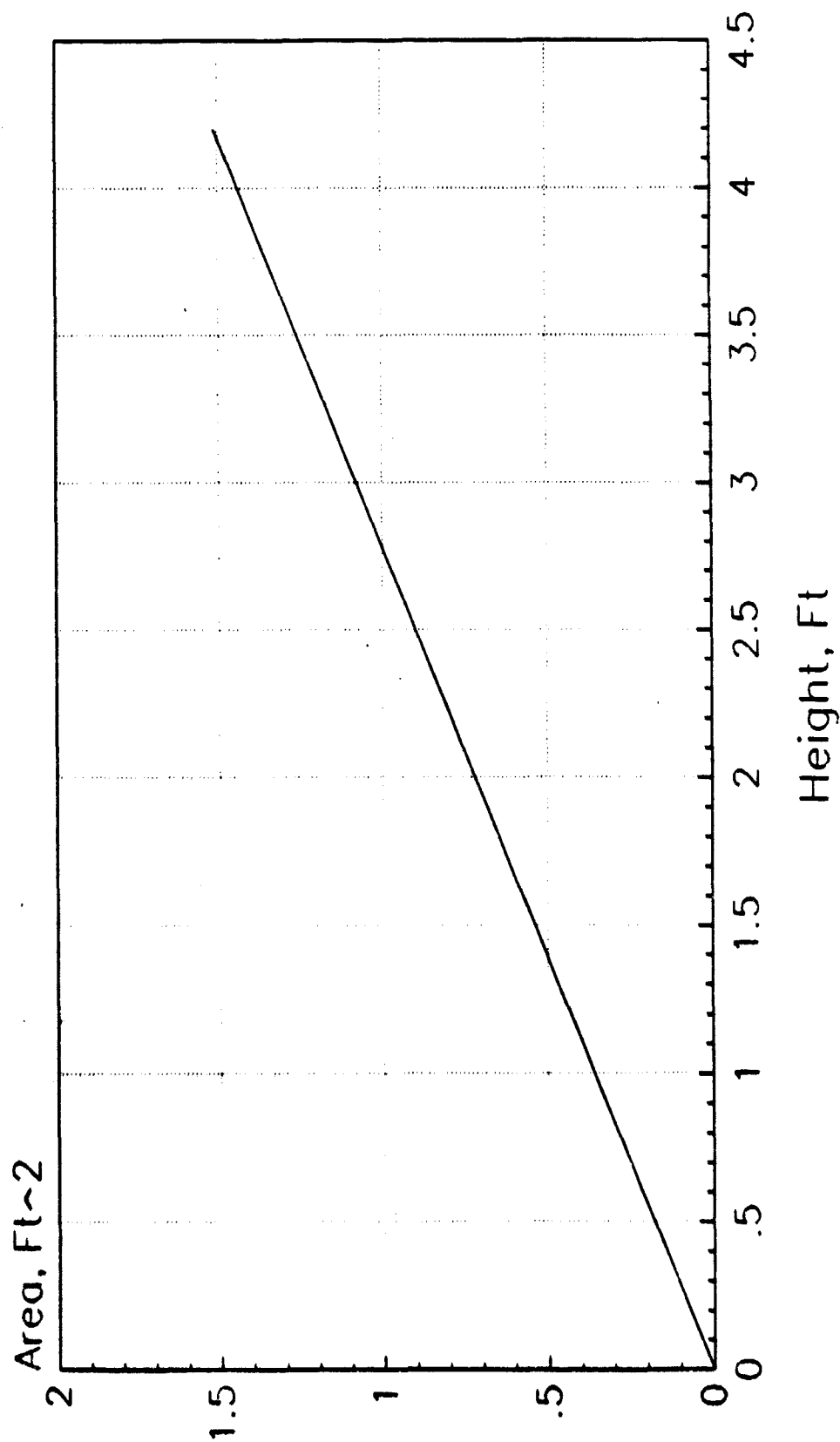
Manufacturers:                            KWH Pipe

Source of Design:                        Nat'l Board of Navig

Drawing Reference:                        Finland 1 & 5

# 50/120 Plastic Spar Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 500mm x 6m Plastic Pillar

Country of Use: Finland

Function: Lighted pillar buoy with prestressed mooring and built-in radar reflector.  
For year-round use in areas of moderate ice action and ice thicknesses less than 30 cm.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 11.80 Ft.

Overall Buoy Length: 20.00 Ft.

Focal Height of Light: 8.20 Ft.

Buoy Beam or Diameter: 1.64 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 7.90 Ft.

Pounds Per Inch Immersion: 11 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in color, IALA system

Subdivision: foam filled

Hull Type: cylindrical pillar

Counterweight Type: none



RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Batteries  
Lighting Equipment: MPV-3 Electric Lantern  
Sound Equipment: none  
Other Payload: Radar Reflector, Built-in  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinker Size: 26,460 Lbs.  
Topmark Type: none  
Number of Padeyes: 0

OPERATING CHARACTERISTICS

Operating Environment: SM, Ice  
Nominal Visual Range of Daymark: 1.9 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 15 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: Retroreflecting Number & Strip

ADDITIONAL DATA

Cost: Replacement: \$4,200  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 10.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene

Special Features:

Buoy uses pre-stressed mooring providing exact location. Retroreflective strips are fixed in milled grooves on the top part of pillar.

Stability Notes:

Unstable without mooring.

General Notes

Replaces wooden archipelago spar.

Manufacturers: KWH Pipe

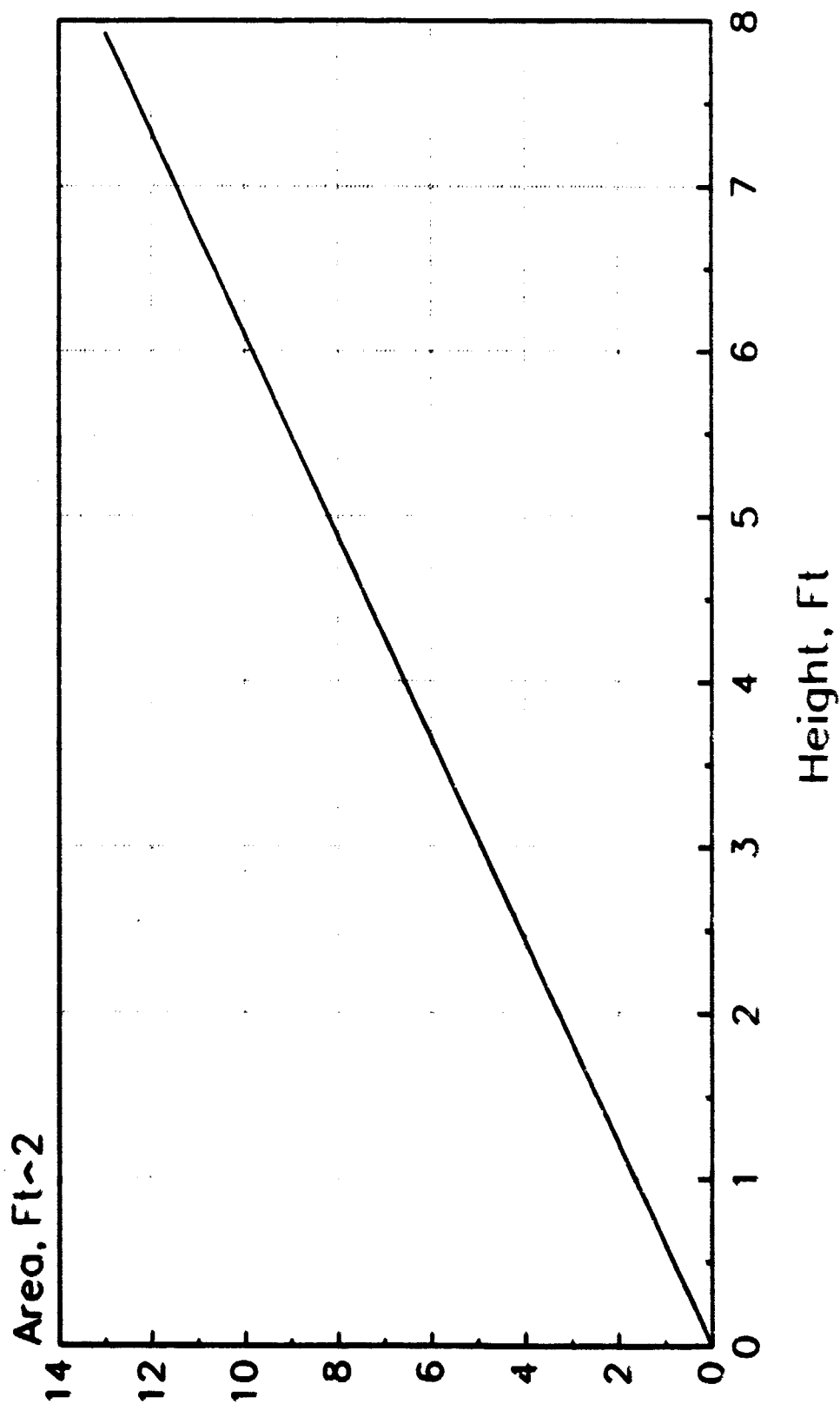
Source of Design: Nat'l Board of Navig

Drawing Reference: Finland 1, 4 & 5

# 500mm x 6m Plastic Pillar

Cumulative Area

\_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: JPK 130-1050 Steel Ice Buoy

Country of Use: Finland

Function: Standard Steel Lighted Buoy for  
semiexposed locations with severe ice  
action.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,737 Lbs.

Buoy Draft: 21.33 Ft.

Overall Buoy Length: 34.45 Ft.

Focal Height of Light: 13.50 Ft.

Buoy Beam or Diameter: 4.27 Ft.

Freeboard: No Mooring: 13.12 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 76 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled/Following

Construction Material: Hull Shell : Steel, RAEX 490  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System: Epoxy/IALA Colors

Subdivision: 5WT Compartments

Hull Type: Cylindrical, Tapered

Counterweight Type: External Rings(Var.)

#### RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Batteries  
Lighting Equipment: MPV-3 Electric Lantern  
Sound Equipment: None  
Other Payload: Built-in Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.250 In.  
Type: Steel Chain  
Sinkers Size: 26,500 Lbs.  
Topmark Type: None  
Number of Padeyes: 8

#### OPERATING CHARACTERISTICS

Operating Environment: SM, Ice  
Nominal Visual Range of Daymark: 2.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 22 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement:\$11,600  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Battery lasts about 3 months depending on light characteristics. Buoy can be lifted aboard tender for minor repairs without diver while attached to mooring.

Special Features:

- 24 m2 radar reflector provides poor visibility on radar.
- Uses light shades of IALA colors.

Stability Notes:

The 1970 design has 4 compartments, and the 1989 design (of similar dimensions and designation) has five.

General Notes

The characteristics given in this record are for the 1989 buoy, which is shown in illustration Finland 3. The 1970 design is shown in illustration Finland 2.

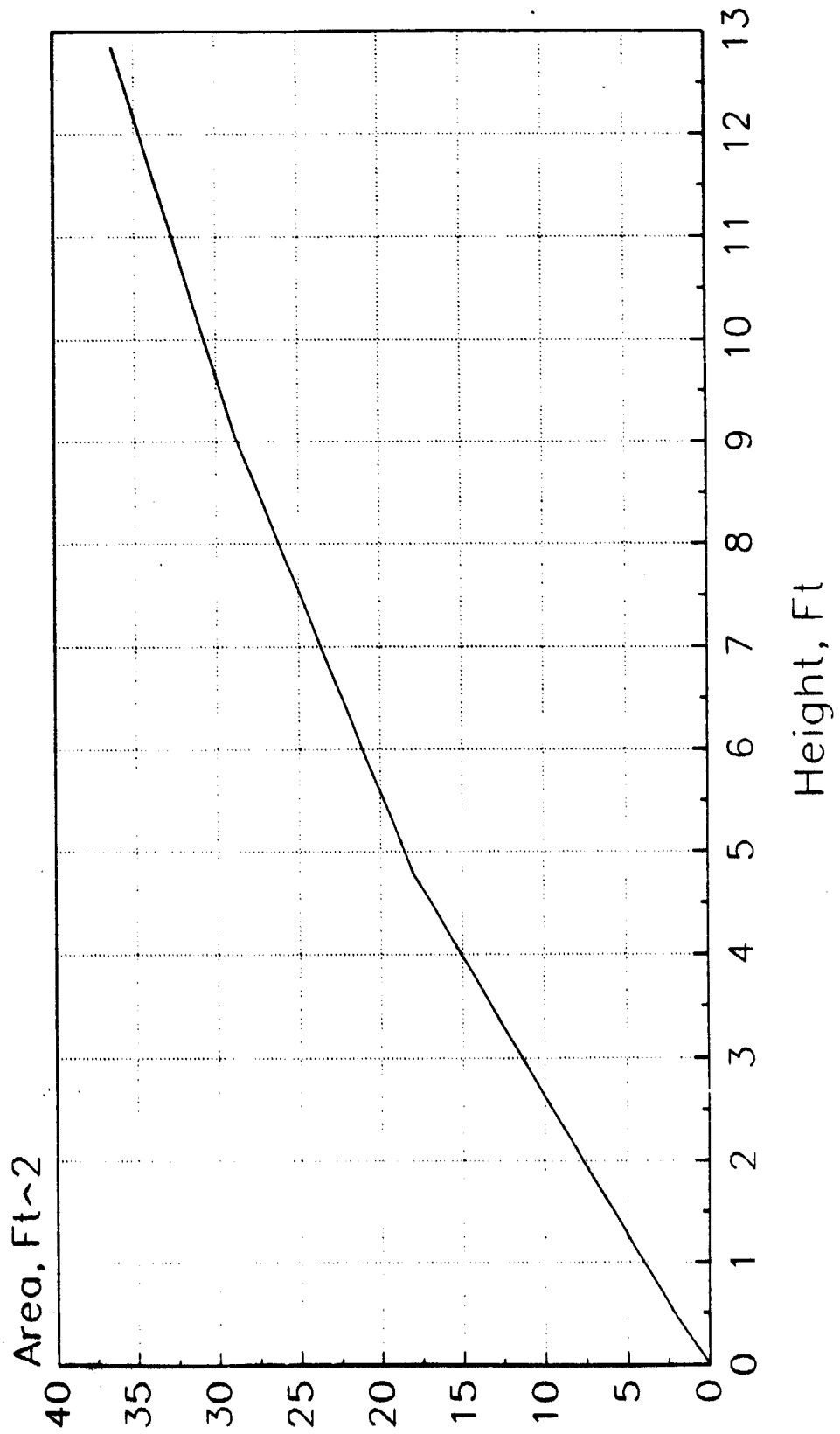
Manufacturers:

Source of Design: Bd. of Navigation

Drawing Reference: Finland 1,2 and 3

# JPK 130-1050 Steel Ice Buoy

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: JPK 130-550 Steel Ice Buoy

Country of Use: Finland

Function: Shallow Water Steel Lighted Buoy for  
partially protected locations with  
severe ice action.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,090 Lbs.

Buoy Draft: 10.83 Ft.

Overall Buoy Length: 18.00 Ft.

Focal Height of Light: 7.50 Ft.

Buoy Beam or Diameter: 4.27 Ft.

Freeboard: No Mooring: 7.17 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel, Grades 37&52  
Hull Filling :  
Tower :  
Topmark :  
Counterweight: Steel

Coating/Coloring System: Epoxy/IALA Colors

Subdivision: Three Compartment

Hull Type: Conical

Counterweight Type: External Rings(Var.)



#### RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Electric Batteries  
Lighting Equipment: MPV-3 Electric Lantern  
Sound Equipment: None  
Other Payload: Built-in Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 17,640 Lbs.  
Topmark Type: None  
Number of Padeyes: 0

#### OPERATING CHARACTERISTICS

Operating Environment: SM, Ice, Shallow Wtr  
Nominal Visual Range of Daymark: 2.1 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 11 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    3 Mos.

Maintenance Notes:

- Battery lasts about 3 months, depending on light characteristics.
- Buoy can be lifed aboard tender for minor repairs without diver, (i.e. with anchor attached)

Special Features:

- Radar reflector 20-30m2 in X-Band - poor visibility on radar.
- Uses light shades of IALA colors: yellow, red & green.

Stability Notes:

General Notes

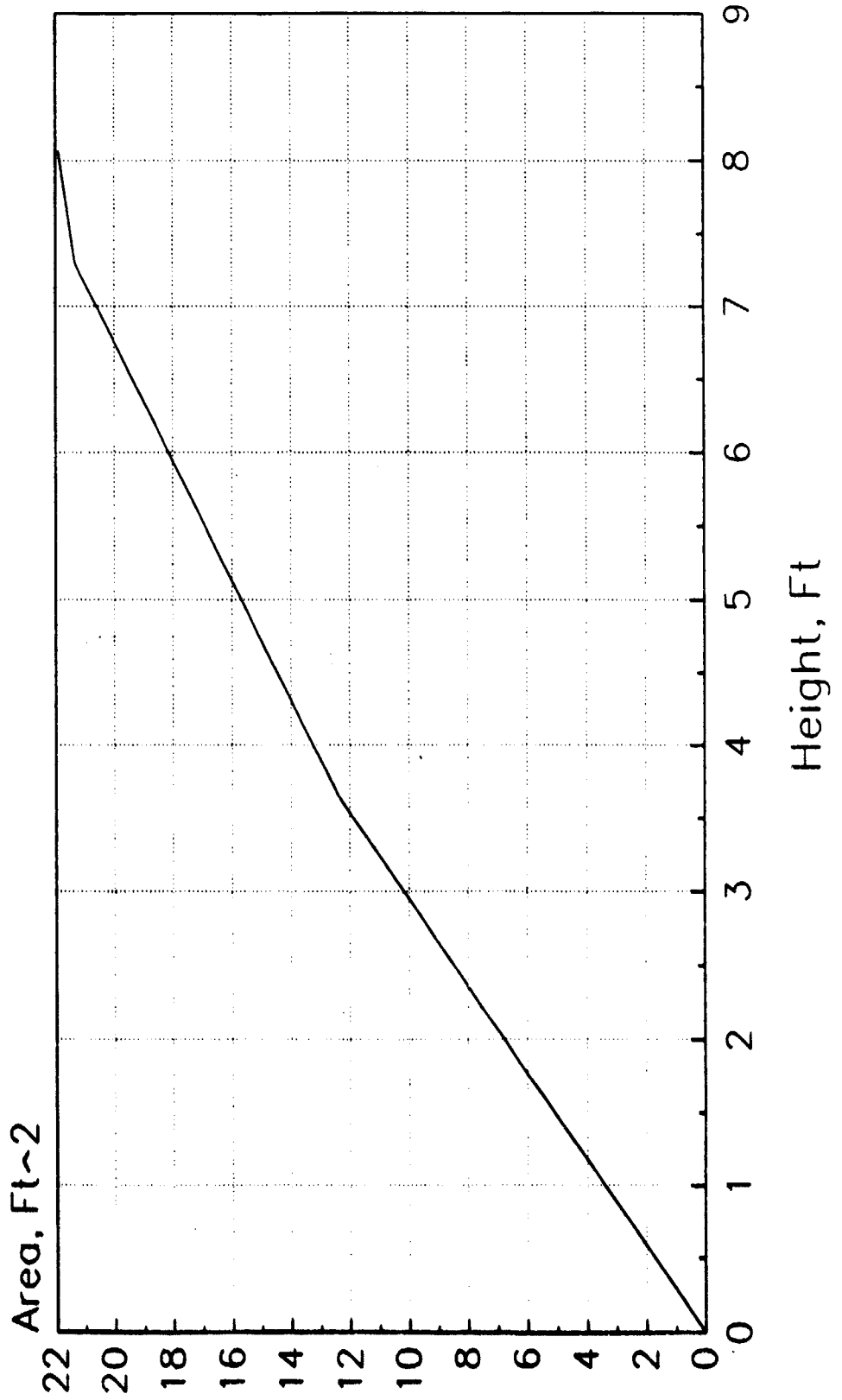
Manufacturers:

Source of Design:                    Board of Navigation

Drawing Reference:                    Finland 1 & 2

# JPK 130-550 Steel Ice Buoy

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 90/160 Plastic Spar

Country of Use: Finland MFG-1

Function: Unlighted spar buoy, with prestressed  
mooring, for protected yachting  
channels.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 4.25 Ft.

Overall Buoy Length: 9.85 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 0.53 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 5.60 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Decoupled

Construction Material: Hull Shell : HD Polyethylene Pipe  
Hull Filling : Exp. Polystyrene Foam  
Tower :  
Topmark :  
Counterweight:

Coating/Coloring System: Moulded-in Color, IALA System

Subdivision: Foam Filled

Hull Type: Spar

Counterweight Type: None

## RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources: None

Lighting Equipment: None

Sound Equipment: None

Other Payload: Copper Sheet Radar Reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Polypropylene Rope

Sinker Size: 440 Lbs.

Topmark Type: None

Number of Padeyes: 0

## OPERATING CHARACTERISTICS

Operating Environment: PM, Ice

Nominal Visual Range of Daymark: 1.2 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 5 Ft.  
Maximum: 0 Ft.

Reflective Material Type: Scotchlite Hi Strips

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:         \$0  
                         Monthly Servicing:     \$0

Service Life:                        10.0 Yrs.

Maintenance Interval:                12 Mos.

## Maintenance Notes:

Good resistance to ice damage due to low adhesion of ice to polyethylene.

## Special Features:

Buoy uses prestressed mooring providing an exact position. Retroreflective strips are fixed in milled grooves on the upper part of spar.

## Stability Notes:

Unstable without mooring.

## General Notes

- Replaces wooden inland spar.
- This manufacturer is also the manufacturer of all plastic buoys used by the Board of Navigation from 500mm diameter to 1600mm diameter.

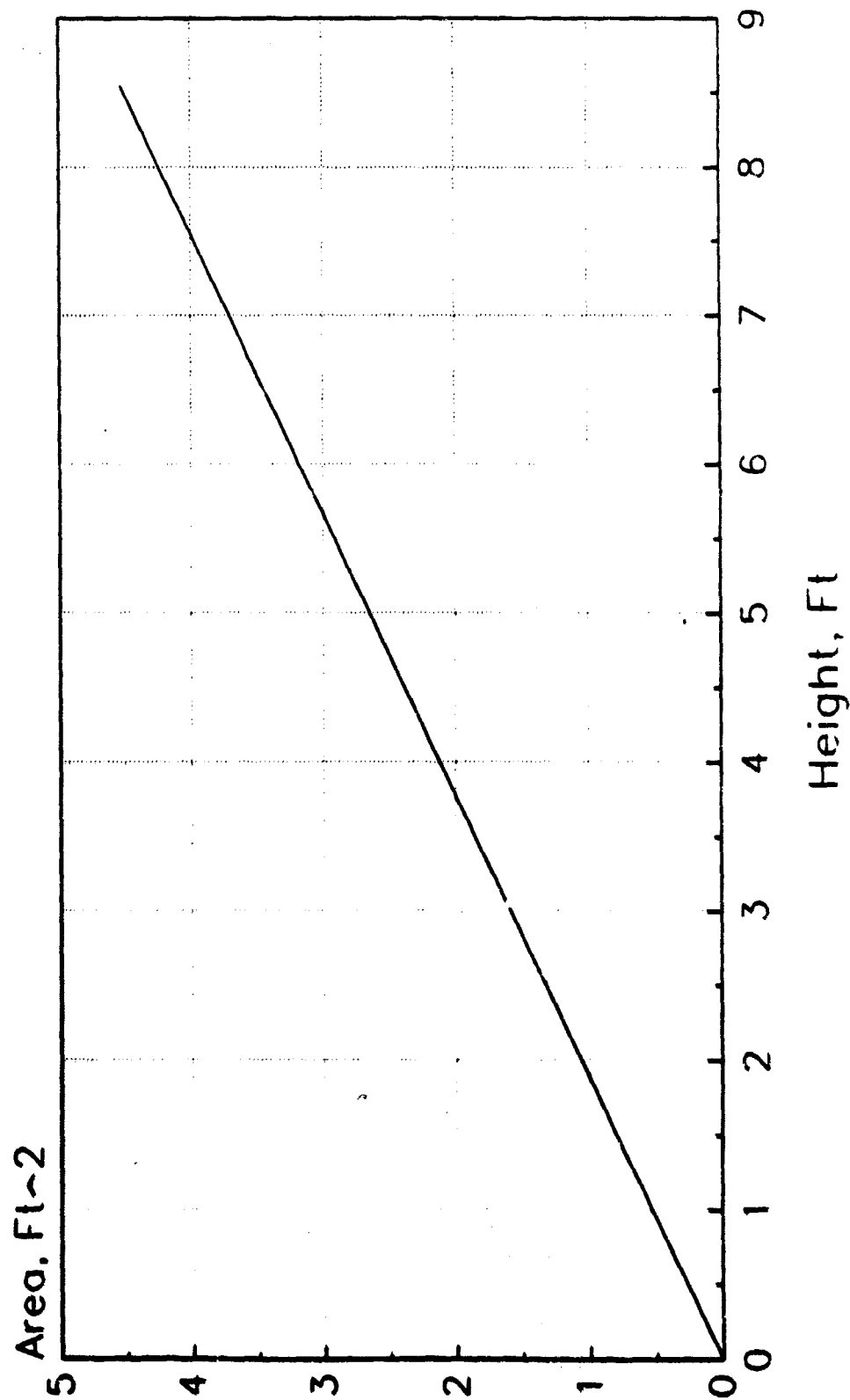
Manufacturers:                        KWH Pipe

Source of Design:                     Board of Navigation

Drawing Reference:                    Finland 1 & 5

# 90/160 Plastic Spar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 12 M3 Lighted Buoy With Tail

Country of Use: France

Function: Used for marking the limits of a channel with precision or indicating an isolated danger. Can be equipped with a bell or an air whistle.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	22,330 Lbs.
Buoy Draft:	21.70 Ft.
Overall Buoy Length:	46.73 Ft.
Focal Height of Light:	20.34 Ft.
Buoy Beam or Diameter:	8.20 Ft.
Freeboard:	No Mooring: 2.40 Ft. Minimum: 1.41 Ft.
Pounds Per Inch Immersion:	260 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	4,970 Lbs.
Wave Motion Response:	Wave Following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Steel Topmark : Steel Counterweight: Cast Iron
Coating/Coloring System:	Two Coats of "Corroless"
Subdivision:	One Compartment
Hull Type:	Cylindrical
Counterweight Type:	Rings Fixed On Tail



#### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Propane Gas - 500 kg

Lighting Equipment: Gas lantern

Sound Equipment: Bell or whistle or none

Other Payload: Passive radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.181 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 3

#### OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.4 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$33,300  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Buoy body serves as gas tank; contains 500 kg. (approx. 1100 lbs.) of propane in liquid and gas state.

Stability Notes:

General Notes

Weight of buoy with bell 22,914 lbs.

Weight of buoy with whistle 22,804.

The shape of buoy top is elliptical and the buoy bottom is conical

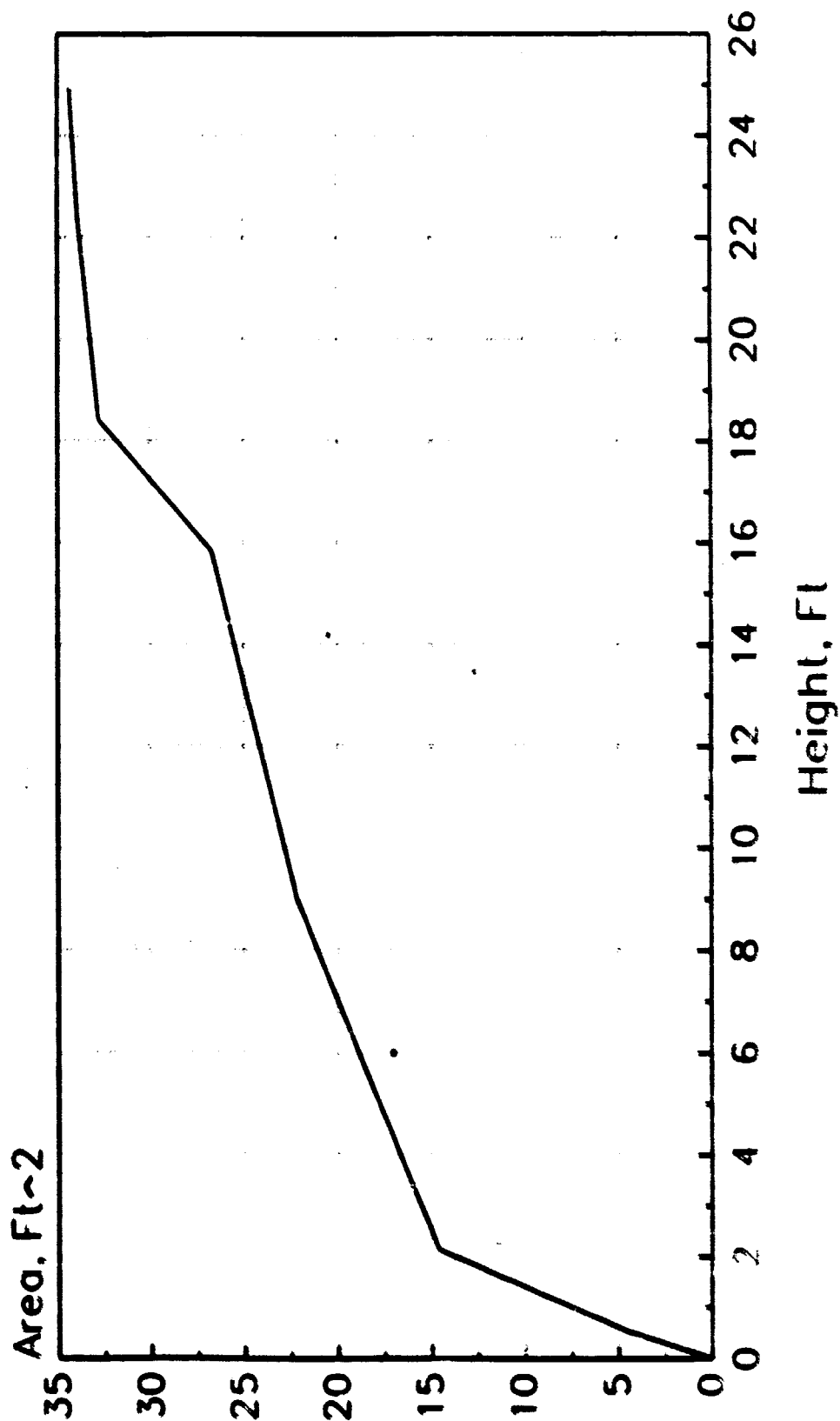
Manufacturers:

Source of Design: Phares & Balises

Drawing Reference: France - 12

# 12 M3 Lighted Buoy With Tail

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: 18 M3 Lighted Buoy With Tail

Country of Use: France

Function: Used for marking channels or isolated dangers. Can have bell or whistle installed.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 27,627 Lbs.

Buoy Draft: 26.83 Ft.

Overall Buoy Length: 56.39 Ft.

Focal Height of Light: 24.97 Ft.

Buoy Beam or Diameter: 9.84 Ft.

Freeboard: No Mooring: 3.59 Ft.  
Minimum: 1.67 Ft.

Pounds Per Inch Immersion: 383 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 8,500 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark : Steel  
Counterweight: Cast Iron

Coating/Coloring System: Two Coats of "Corroless"

Subdivision: One Compartment

Hull Type: Cylindrical

Counterweight Type: Rings fixed on tail

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Propane gas - 600 kg  
Lighting Equipment: Gas lantern  
Sound Equipment: Bell or whistle or none  
Other Payload: Passive radar reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.375 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement: \$44,600  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    0.0 Yrs.

Maintenance Interval:            0 Mos.

Maintenance Notes:

Special Features:

Buoy body serves as gas tank and contains 600 kg. (approx.  
1350 lbs.) of propane in liquid and gaseous state.

Stability Notes:

General Notes

Weight of buoy with bell 28210 lbs.  
Weight of buoy with whistle 28100 lbs.  
The shape of buoy at top is elliptical and at bottom,  
conical.

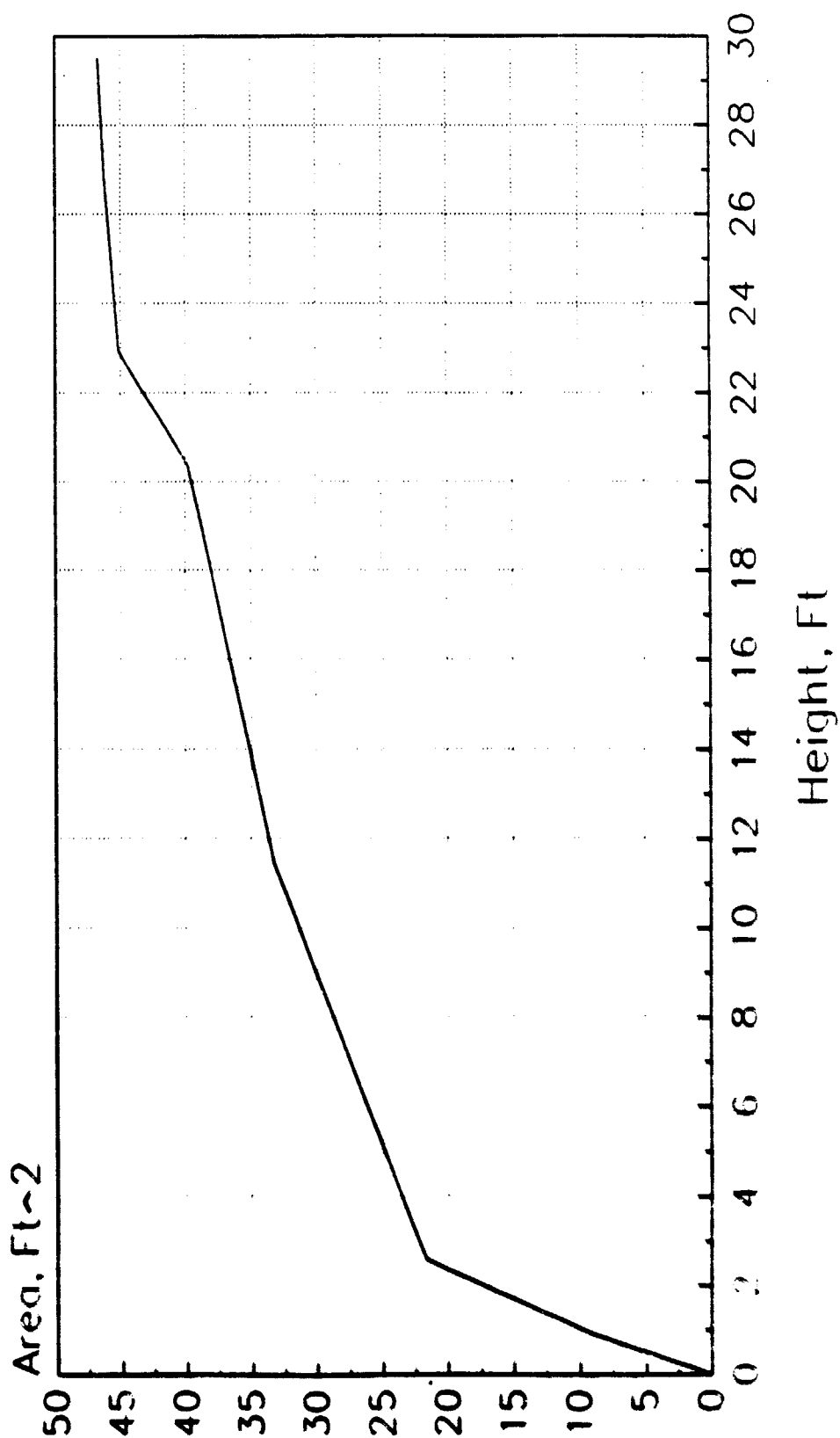
Manufacturers:

Source of Design:                Phares & Balises

Drawing Reference:               France - 13

# 18 M3 Lighted Buoy With Tail

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: 7.5 M3 Lighted Buoy With Tail

Country of Use: France

Function: Used for marking the limits of a channel with precision or indicating an isolated danger. Can be equipped with a bell or an air whistle.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 12,671 Lbs.

Buoy Draft: 16.33 Ft.

Overall Buoy Length: 33.54 Ft.

Focal Height of Light: 10.72 Ft.

Buoy Beam or Diameter: 7.22 Ft.

Freeboard: No Mooring: 2.53 Ft.  
Minimum: 1.47 Ft.

Pounds Per Inch Immersion: 208 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 3,310 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark : Steel  
Counterweight: Cast Iron

Coating/Coloring System: "Two Coats of "Corroless"

Subdivision: One Compartment

Hull Type: Cylindrical

Counterweight Type: Rings placed on tail



#### RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Propane Gas - 350 Kg

Lighting Equipment: Gas Lantern

Sound Equipment: Bell or Whistle (or no sound)

Other Payload: Passive Radar Reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.000 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 3

#### OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement: \$19,400  
                         Preparation:        \$0  
                         Monthly Servicing:      \$0

Service Life:                              0.0 Yrs.

Maintenance Interval:                      0 Mos.

Maintenance Notes:

Special Features:

Buoy body serves as a propane tank - contains 350 kg.  
(Approx. 800 lbs.) of propane in liquid and gas state.

Stability Notes:

General Notes

Buoy weight with bell: 13267 lbs.  
Buoy weight with whistle: 13035 lbs.  
Top of buoy hull is elliptical and bottom is conical in  
shape.

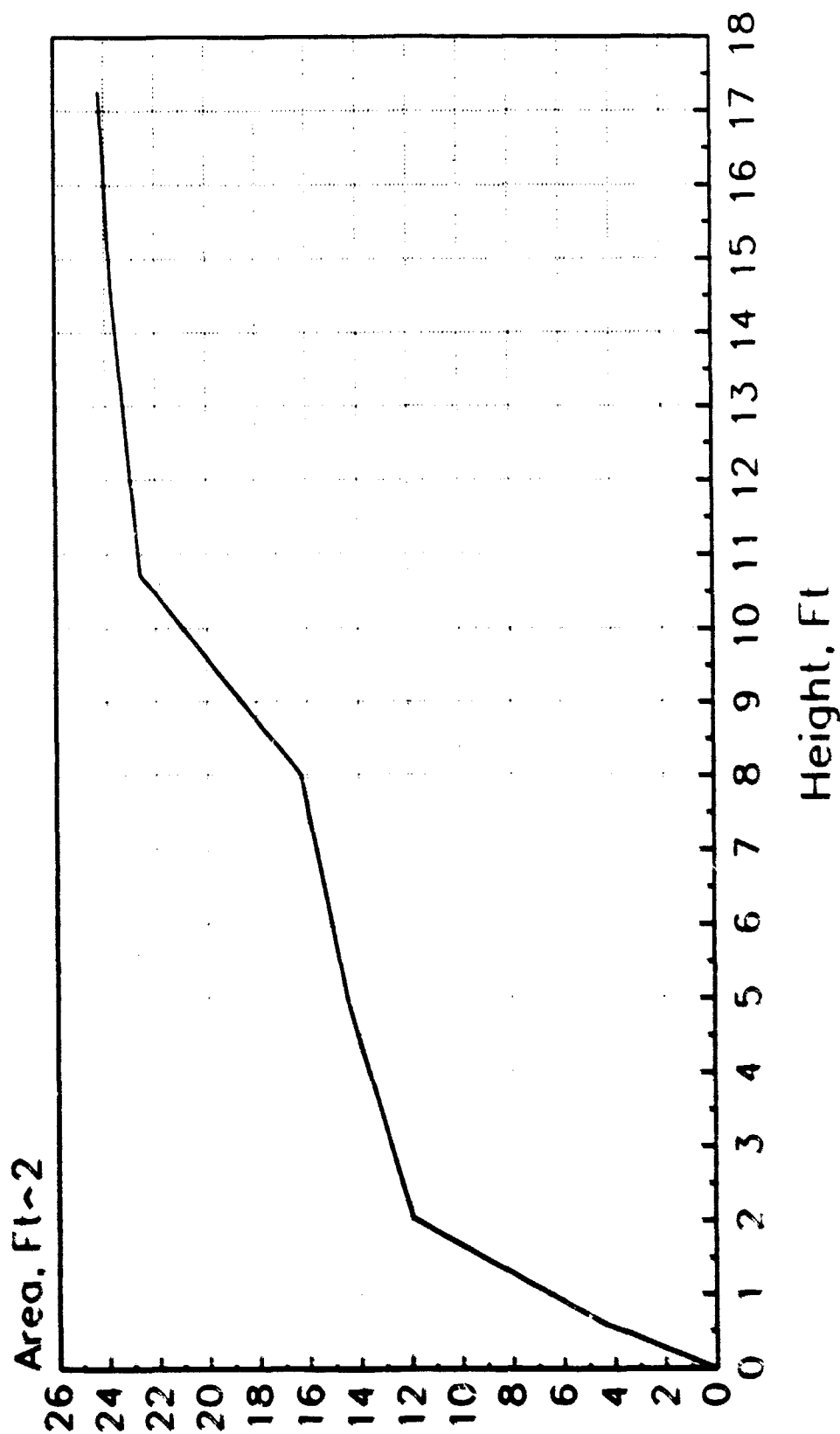
Manufacturers:

Source of Design:                              Phares & Balises

Drawing Reference:                              France - 11

# 7.5 M3 Lighted Buoy With Tail

Cumulative Area \_\_\_\_\_



GENERAL INFORMATION

Name of Buoy: DELPHINE Flat Bottom Lighted

Country of Use: France

Function: For use in protected, normal or moderately exposed shallow water areas with all types of lateral, cardinal, or special marks.

Date Of Last Update For This Record: 01/25/91

PHYSICAL CHARACTERISTICS

Buoy Weight:	3,530 Lbs.
Buoy Draft:	2.49 Ft.
Overall Buoy Length:	15.42 Ft.
Focal Height of Light:	10.50 Ft.
Buoy Beam or Diameter:	8.20 Ft.
Freeboard	No Mooring: 0.00 Ft.
	Minimum: 1.71 Ft.
Pounds Per Inch Immersion:	0 Lbs.
Metacentric Height:	0.00 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave Following
Construction Material:	Hull Shell : GRP
	Hull Filling :
	Tower : GRP
	Topmark :
	Counterweight: Cast Iron
Coating/Coloring System:	GRP tinted with gelcoat
Subdivision:	Four compartments
Hull Type:	Discus
Counterweight Type:	Internal at bottom

RELATED EQUIPMENT

Number of Power Sources: 5  
Type of Power Sources: 20 W Solar Panels & Battery  
Lighting Equipment: Electric lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral/Cardinal  
Number of Padeyes: 4

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 4.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement:\$11,700  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Has one manhole for each compartment for easy access to service and repair.

Special Features:

All metallic inserts used on GRP are stainless steel.  
Lifting padeyes and attachment bolts are hot galvanized steel.

Stability Notes:

Roll period 2 sec.

General Notes

Four lugs at bottom of buoy allow for lateral mooring or the use of a bridle arrangement.

Radar reflector is omnidirectional.

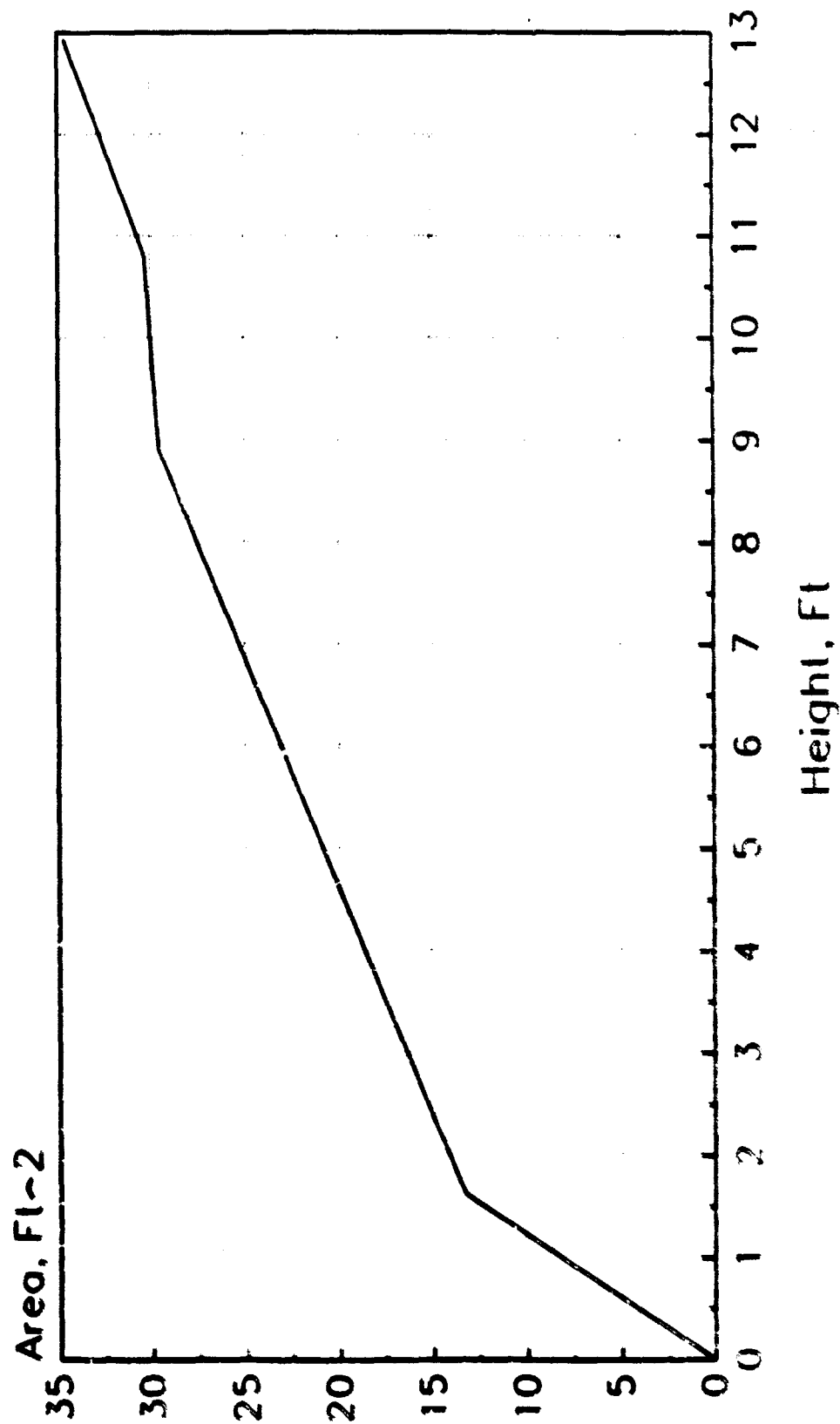
Manufacturers: Gisman

Source of Design: Phares & Balises

Drawing Reference: France-14

# DELPHINE Flat Bottom Lighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: DELPHINE Improved Stability

Country of Use: France

Function: A buoy with skirt for protected, normal, or moderated exposed medium depth (up to 100ft) areas with any type of lateral cardinal, or special mark.

Date Of Last Update For This Record: 01/25/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,310 Lbs.

Buoy Draft: 6.23 Ft.

Overall Buoy Length: 19.69 Ft.

Focal Height of Light: 10.83 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard      No Mooring: 0.00 Ft.  
                 Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP  
Hull Filling :  
Tower : GRP  
Topmark :  
Counterweight: Std Shot or Pig Iron

Coating Coloring System: GRP tinted with Gelcoat

Subdivision: Four Compartments

Hull Type: Discus

Counterweight Type: Internal Tail-Tube



RELATED EQUIPMENT

Number of Power Sources: 5  
Type of Power Sources: 20w solar panels and battery ●  
Lighting Equipment: Electric lantern  
Sound Equipment:  
Other Payload: ●  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In. ●  
Type: Steel Chain  
Sinker Size: 0 Lbs.  
Topmark Type: Lateral or Cardinal  
Number of Padeyes: 4 ●

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi. ●  
Radar Range: 4.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft. ●  
Maximum: 0 Ft.  
Reflective Material Type: ●

ADDITIONAL DATA

Cost: Replacement:\$11,700  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Each hull compartment has a manhole for easy access during servicing.

Special Features:

All metallic inserts on GRP hull are stainless steel. Bolts and padeyes are hot galvanized steel.

Stability Notes:

Roll period 2.5 sec.  
Separate battery compartment.

General Notes

The skirt has a trapezoidal top, an offset middle tail, and a hexagonal plate at bottom end which acts as a damper of buoy motions.  
Radar reflector is omnidirectional.

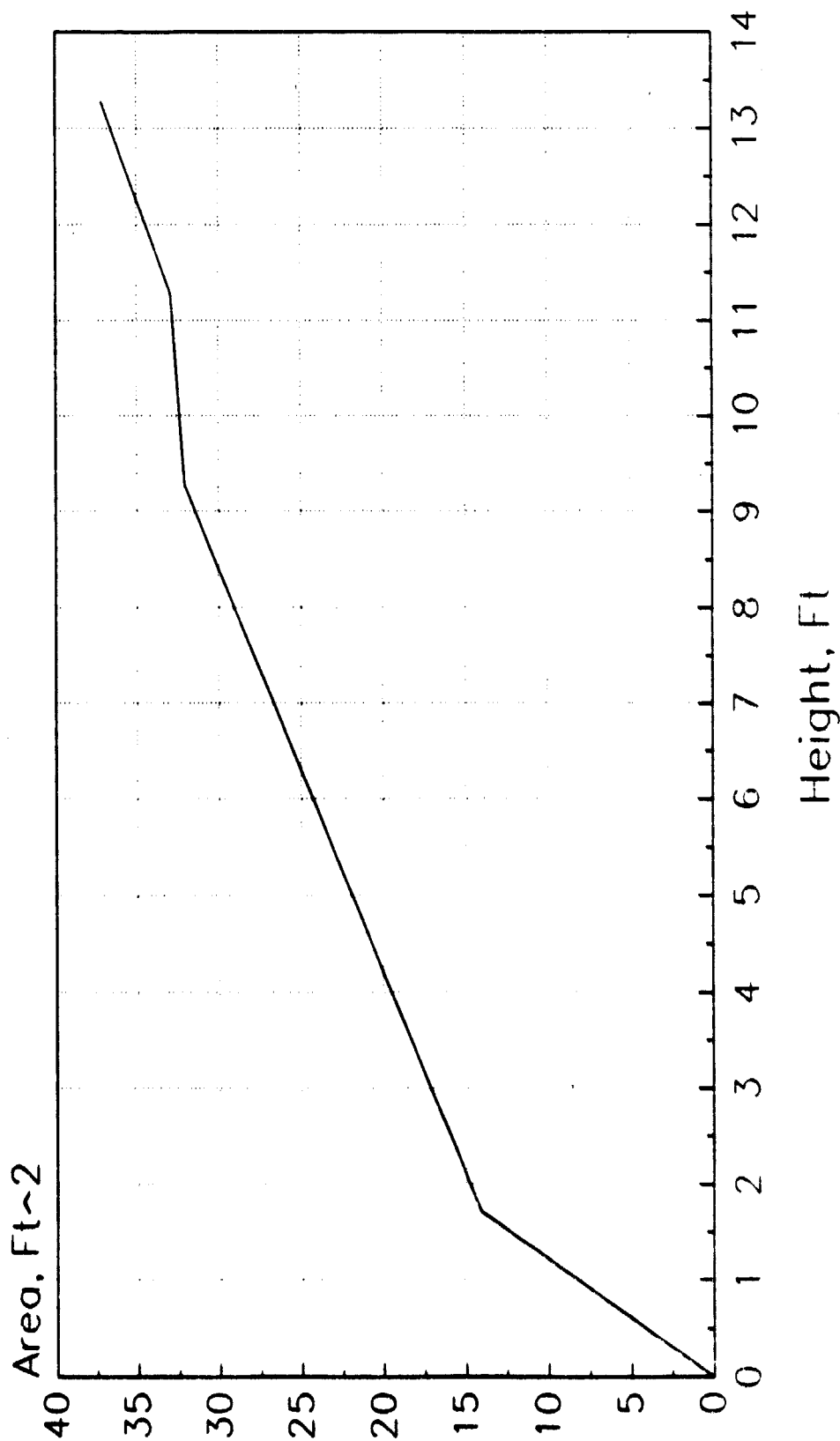
Manufacturers: Gisman

Source of Design: Phares & Balises

Drawing Reference: France-15

# DELPHINE Improved Stability

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Flat Bottom Lighted 5 cu. m.

Country of Use: France

Function: Used in relatively calm areas for  
channel and isolated danger markers.  
This is an old buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,991 Lbs.

Buoy Draft: 5.89 Ft.

Overall Buoy Length: 20.87 Ft.

Focal Height of Light: 9.50 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 2.21 Ft.  
Minimum: 1.66 Ft.

Pounds Per Inch Immersion: 230 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark : Steel  
Counterweight: Cast Iron

Coating/Coloring System: "Corroless" - Two Coats

Subdivision: Two Compartments

Hull Type: Bi-Conical

Counterweight Type: Rings Placed on Tail

#### RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Propane Bottle - 250 Kg  
Lighting Equipment: Gas Lantern  
Sound Equipment:  
Other Payload: Passive Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 3

#### OPERATING CHARACTERISTICS

Operating Environment: SM  
Nominal Visual Range of Daymark: 2.0 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$18,800  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

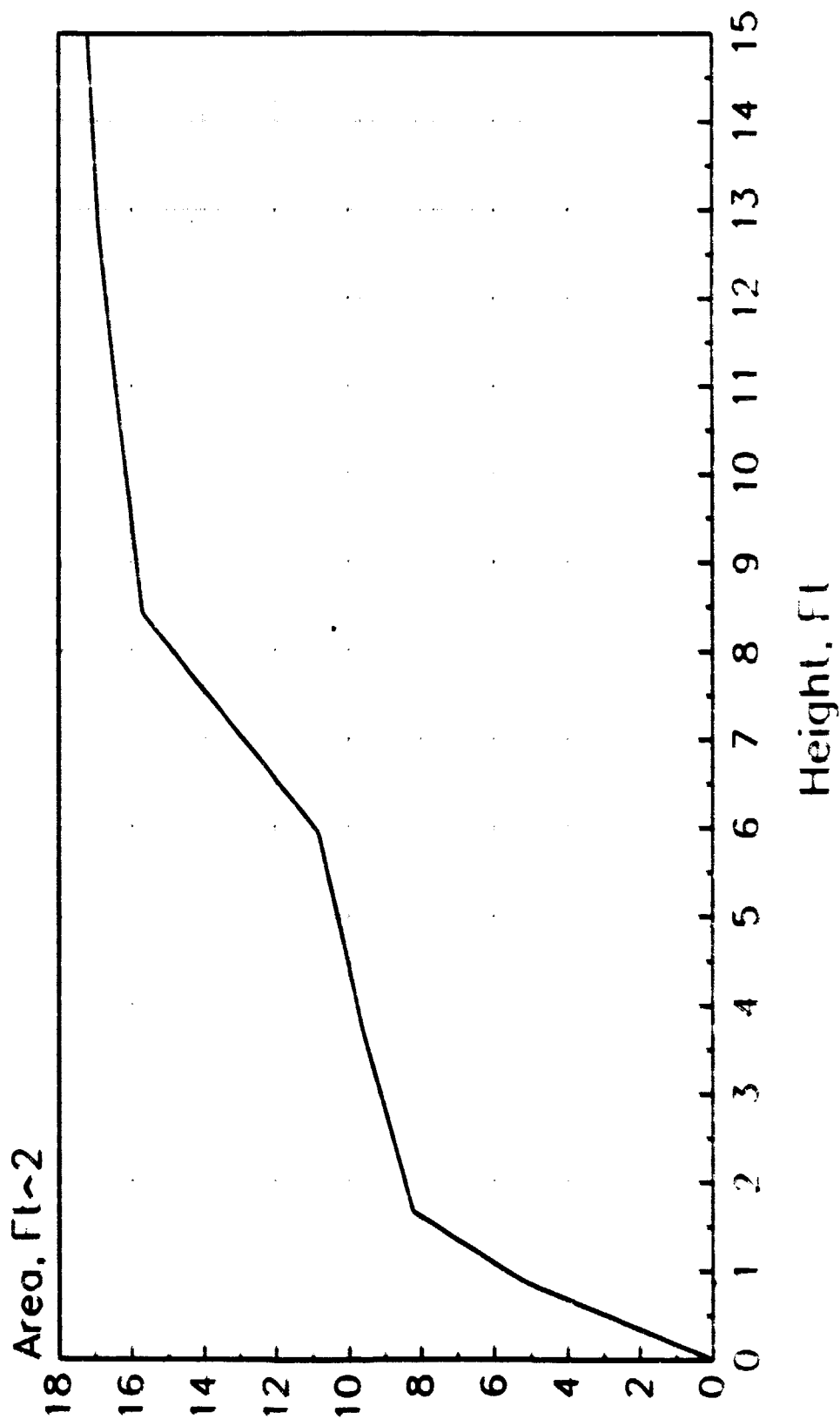
Manufacturers:

Source of Design: Phares & Balises

Drawing Reference: France - 2

# Flat Bottom Bottom Lighted 5 cu. m.

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Intermediate Buoy-Lighted

Country of Use: France

Function: For use in water depths not more than 25 meters. Mostly used in exposed areas; may be equipped with lateral or cardinal topmarks; may rest at bottom at low tide.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 3,179 Lbs.

Buoy Draft: 1.64 Ft.

Overall Buoy Length: 11.26 Ft.

Focal Height of Light: 10.44 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 1.03 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark : Rubber  
Counterweight: None

Coating/Coloring System: Universal Epoxy

Subdivision:

Hull Type: Cylindrical

Counterweight Type: None



RELATED EQUIPMENT

Number of Power Sources: 4  
Type of Power Sources: 9 V 50 AH Mazda Batteries  
Lighting Equipment: Alum Type 7610 Lantern 45mm  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 1.000 In.  
Length : 6.6 Ft.  
Mooring Line: Size: 1.181 In.  
Type: Steel Chain  
Sinkers Size: 4,480 Lbs.  
Topmark Type: Lateral or Cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 80 Ft.  
Reflective Material Type: N/A

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 22 Mos.

Maintenance Notes:

Special Features:

Stability Notes:

General Notes

Can also be used as unlighted buoy if not fitted with batteries and lantern.

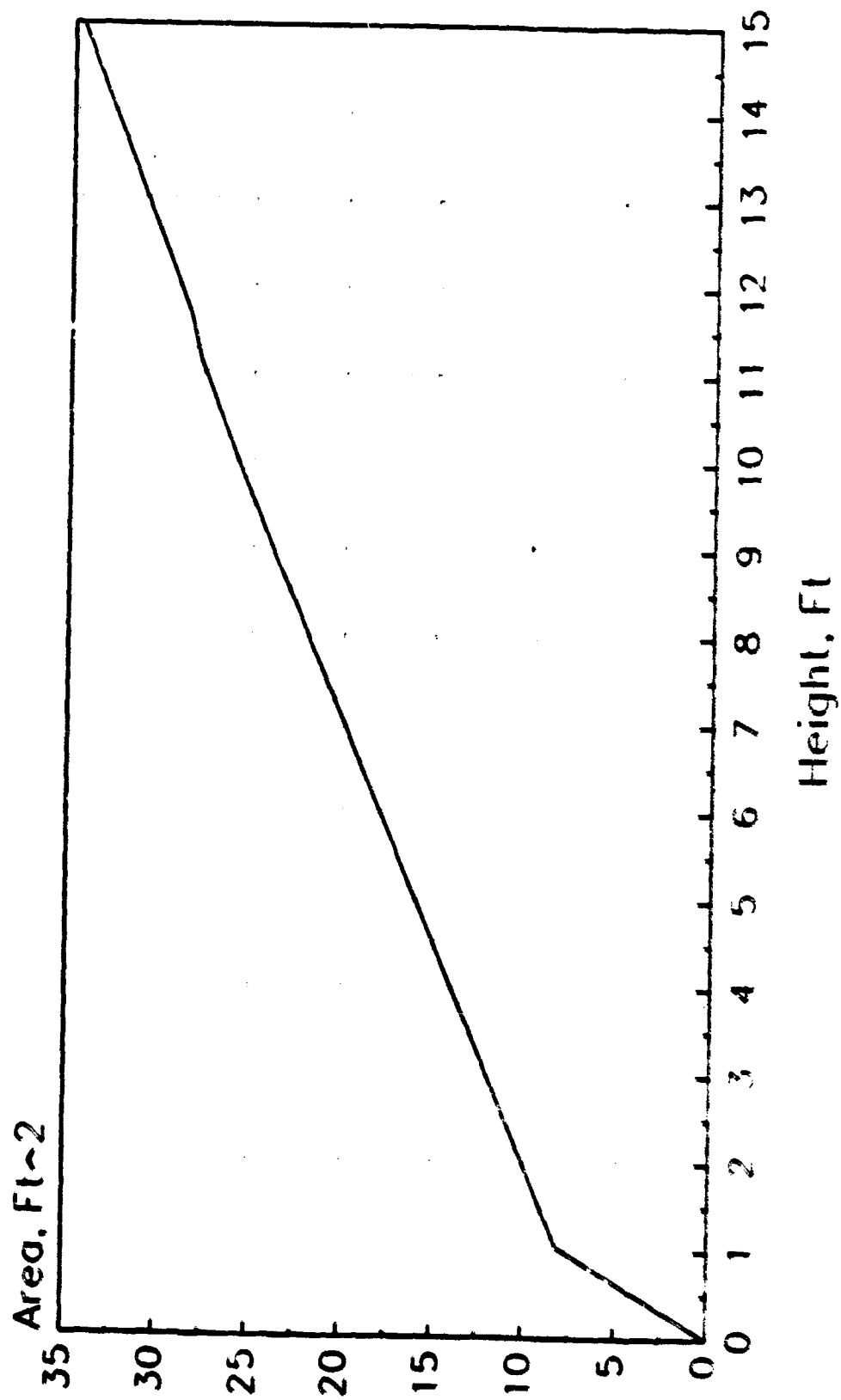
Manufacturers:

Source of Design: Phares & Balises

Drawing Reference: France - 1

# Intermediate Buoy--Lighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Lighted Marina Buoy

Country of Use: France

Function: Flat bottom buoy for use in shallow protected waters. Can be equipped with cylindrical or conical (can or nun) type tops.

Date Of Last Update For This Record: 01/25/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 715 Lbs.

Buoy Draft: 1.25 Ft.

Overall Buoy Length: 0.00 Ft.

Focal Height of Light: 4.92 Ft.

Buoy Beam or Diameter: 4.59 Ft.

Freeboard      No Mooring: 1.64 Ft.  
                 Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 471 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP  
Hull Filling :  
Tower : GRP  
Topmark :  
Counterweight: Cast Iron

Coating Coloring System:

Subdivision: Four Compartments

Hull Type: Discus

Counterweight Type: Bell At Buoy Bottom

## RELATED EQUIPMENT

Number of Power Sources: 4

Type of Power Sources: 10W Solar Panels-12V/24AH Bat

Lighting Equipment: 5W Electric Lantern

Sound Equipment:

Other Payload: 300mm dia radar reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$2,850  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

All metallic attachment elements are stainless steel.  
Eyebolts for lifting and mooring chain are galvanized steel.

Stability Notes:

Roll periods are 1.8 sec for conical and 2.0 sec for cylindrical types.

General Notes

In addition to the three compartments this buoy has a separate "energy" compartment.

Manufacturers: Gisman

Source of Design: Phares & Balises

Drawing Reference: Franco-10

## GENERAL INFORMATION

Name of Buoy: Marina Buoy-Cardinal Unlighted

Country of Use: France

Function: Flat bottom buoy for use in shallow protected waters. Can be fitted with any cardinal directional topmark.

Date Of Last Update For This Record: 01/25/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 640 Lbs.

Buoy Draft: 1.18 Ft.

Overall Buoy Length: 7.64 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.59 Ft.

Freeboard      No Mooring: 1.71 Ft.  
                 Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 554 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP  
Hull Filling :  
Tower : GRP  
Topmark : GRP  
Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: 3 Compartments

Hull Type: Discus

Counterweight Type: Bell At Buoy Bottom

RELATED EQUIPMENT

Number of Power Sources: 0

Type of Power Sources:

Lighting Equipment:

Sound Equipment:

Other Payload: 300mm Specter Radar Reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type: Cardinal (Triangles)

Sinker Size: 0 Lbs.

Topmark Type: Cardinal (Triangles)

Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.4 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



ADDITIONAL DATA

Cost: Replacement: \$2,850  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

All metallic attachment parts are stainless steel. Lifting  
and mooring eyebolts are galvanized steel.

Stability Notes:

Roll period: 2 sec.

General Notes

The spar tower has a diameter of 11.80 inch and a height of  
4.76 ft.

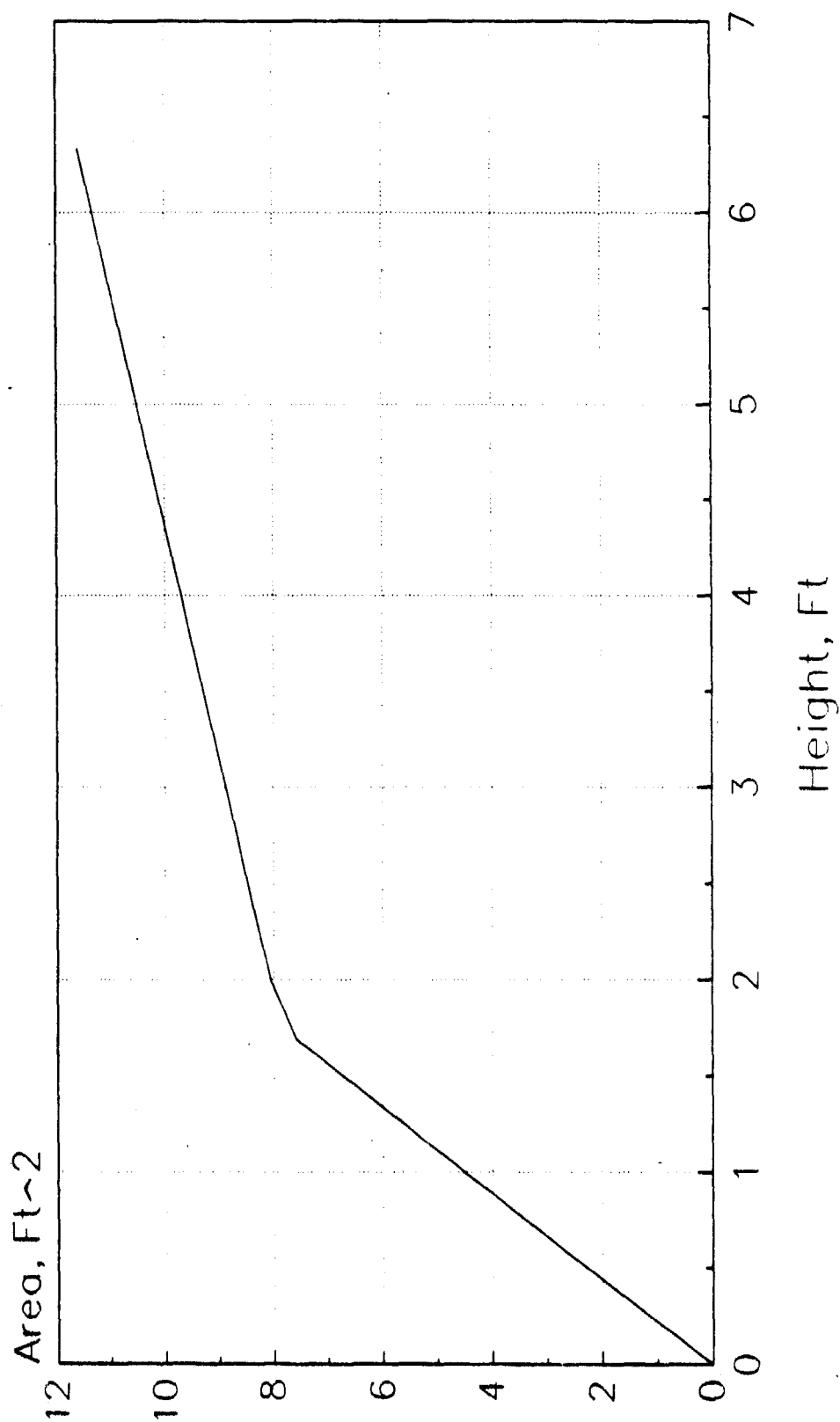
Manufacturers: Gisman

Source of Design: Phares & Balises

Drawing Reference: France-10

# Marina Buoy—Cardinal Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Marina Buoy-Lateral Unlighted

Country of Use: France

Function: Flat bottom buoys made of fiberglass for  
use in protected shallow water areas.  
Can be equipped with CAN or NUN type  
tops.

Date Of Last Update For This Record: 01/25/91

## PHYSICAL CHARACTERISTICS

Buoy Weight: 655 Lbs.

Buoy Draft: 1.21 Ft.

Overall Buoy Length: 5.51 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.59 Ft.

Freeboard        No Mooring: 1.68 Ft.  
                 Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 525 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP  
                         Hull Filling :  
                         Tower : GRP  
                         Topmark :  
                         Counterweight: Cast Iron

Coating/Coloring System:

Subdivision: 3 Compartment

Hull Type: Discus

Counterweight Type: Bell At Buoy bottom

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources:  
Lighting Equipment:  
Sound Equipment:  
Other Payload: 300mm Dia Specter Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinker Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: PM  
Nominal Visual Range of Daymark: 1.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$2,850  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

All metallic attachment elements are stainless steel.  
Lifting and mooring eyebolts are galvanized steel.

Stability Notes:

Roll period = 1.5 sec for NUN and 1.7 sec for CAN types.

General Notes

Diameter of CAN top 2.62 ft. Height also 2.62 ft.  
Diameter of NUN type top 3.28 ft. at base and height 3.17  
ft. Overall length of NUN buoy is 6.06 ft.

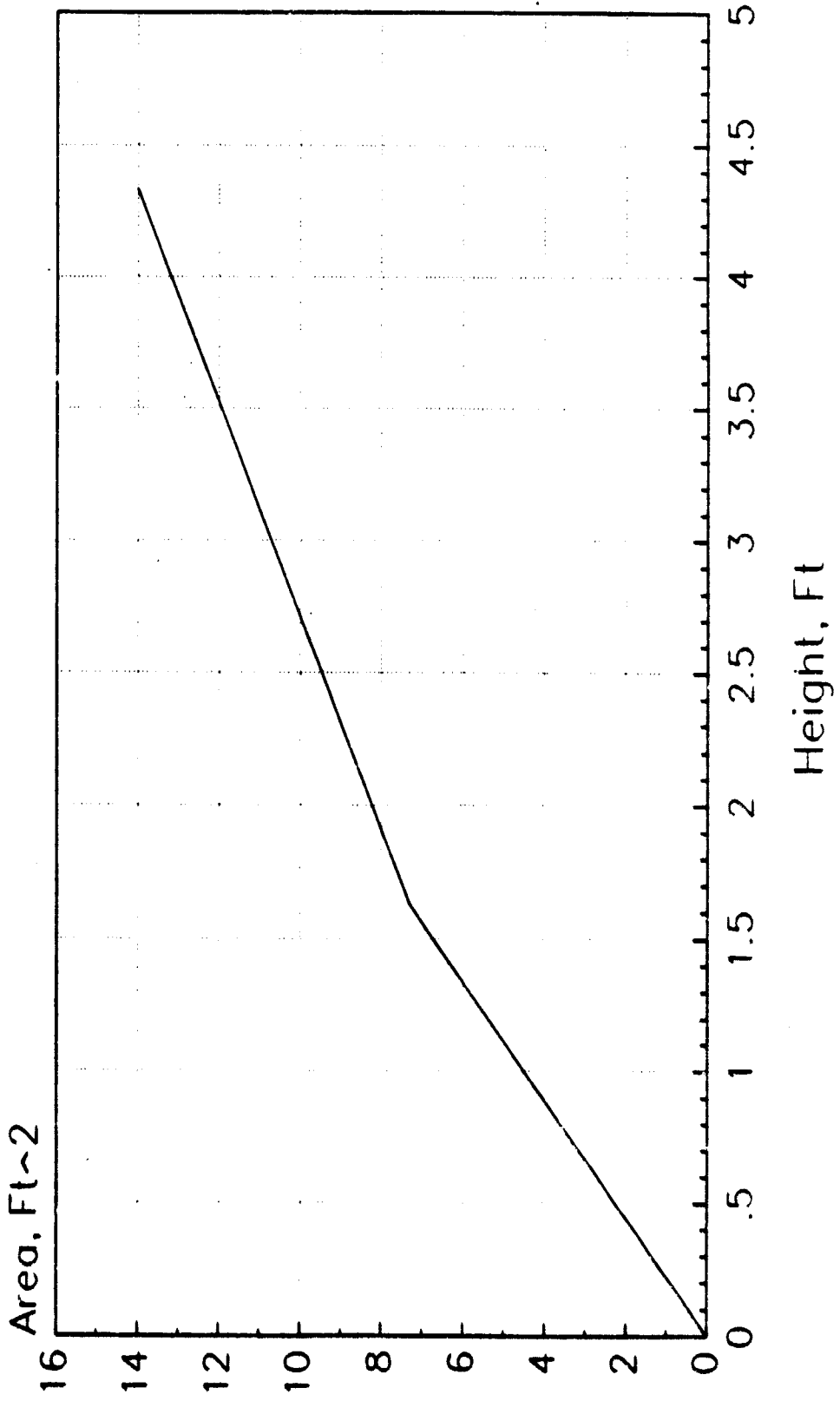
Manufacturers: Gisman

Source of Design: Phares & Balises

Drawing Reference: France-10

# Marina Buoy-Lateral Unlighted

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: NOLWEN Flat Bottom Form Tower

Country of Use: France

Function: Variation of Nolwen type buoy for use in shallow water areas with cylindrical, conical, or spherical form superstructure.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,333 Lbs.

Buoy Draft: 6.04 Ft.

Overall Buoy Length: 16.59 Ft.

Focal Height of Light: 11.40 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 1.74 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.84 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Polyester and Steel  
Topmark :  
Counterweight: Steel

Coating/Coloring System: Epoxy-Zinc Silicate

Subdivision: One Compartment

Hull Type: Cylindrical-Conical

Counterweight Type: Fixed to buoyskirt

RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: Solar panels and batteries

Lighting Equipment: Electric Lantern

Sound Equipment:

Other Payload:

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.378 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.1 Nmi.

Radar Range: 3.7 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

Can only be fitted with "Legere" type solar equipment and  
300mm dia reflector.

Special Features:

Stability Notes:

Roll period is 2.6 sec. (For cylindrical tower only) - The  
GM valve of 1.84 ft. is also for cylindrical version only).

General Notes

Buoy weight with solar equipment and 50 ft. of 1.378" dia.  
chain is 9584 lbs.

Radar reflector is omnidirectional.

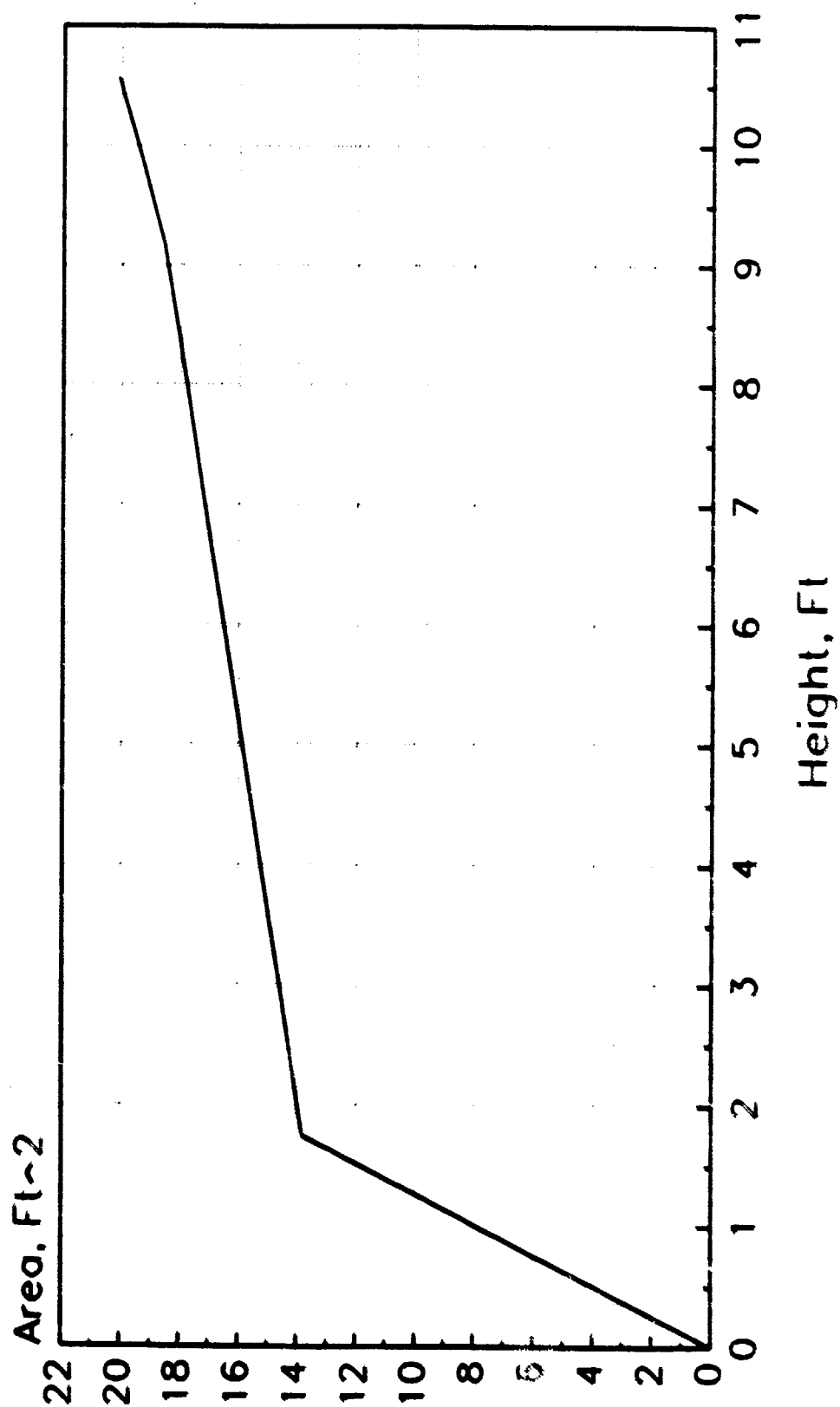
Manufacturers:

Source of Design:                        Phares & Balises

Drawing Reference:                        France - 5

# NOLWEN Flat Bottom Form Tower

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: NOLWEN Flat Bottom Lattice Twr

Country of Use: France

Function: Variation of Nolwen type buoy for use in shallow water areas with lattice type superstructure.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight:	8,333 Lbs.
Buoy Draft:	6.00 Ft.
Overall Buoy Length:	24.05 Ft.
Focal Height of Light:	11.45 Ft.
Buoy Beam or Diameter:	7.87 Ft.
Freeboard:	No Mooring: 0.00 Ft. Minimum: 1.77 Ft.
Pounds Per Inch Immersion:	0 Lbs.
Metacentric Height:	1.54 Ft.
Reserve Buoyancy:	0 Lbs.
Wave Motion Response:	Wave Following
Construction Material:	Hull Shell : Steel Hull Filling : Tower : Steel Topmark : Steel Counterweight: Steel
Coating/Coloring System:	Epoxy/Zinc Silicate
Subdivision:	One Compartment
Hull Type:	Cylindrical/Conical
Counterweight Type:	Fixed to Buoy skirt

RELATED EQUIPMENT

Number of Power Sources: 2  
Type of Power Sources: Solar panels and batteries  
Lighting Equipment: Electric lantern  
Sound Equipment:  
Other Payload: 300mm dia. reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 1.387 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Any lateral/cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.4 Nmi.  
Radar Range: 3.9 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement: \$16,350  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    24 Mos.

Maintenance Notes:

Special Features:

Can be fitted with heavy duty (Lourde) or light duty  
(Legere) lanterns with "Metropole" or "Equateur" solar  
equipment.

Stability Notes:

Roll period = 3.06 sec.

General Notes

Buoy weight with solar equipment and 50 ft of 1.378" chain  
is 9584 lbs.

Radar reflector is omnidirectional.

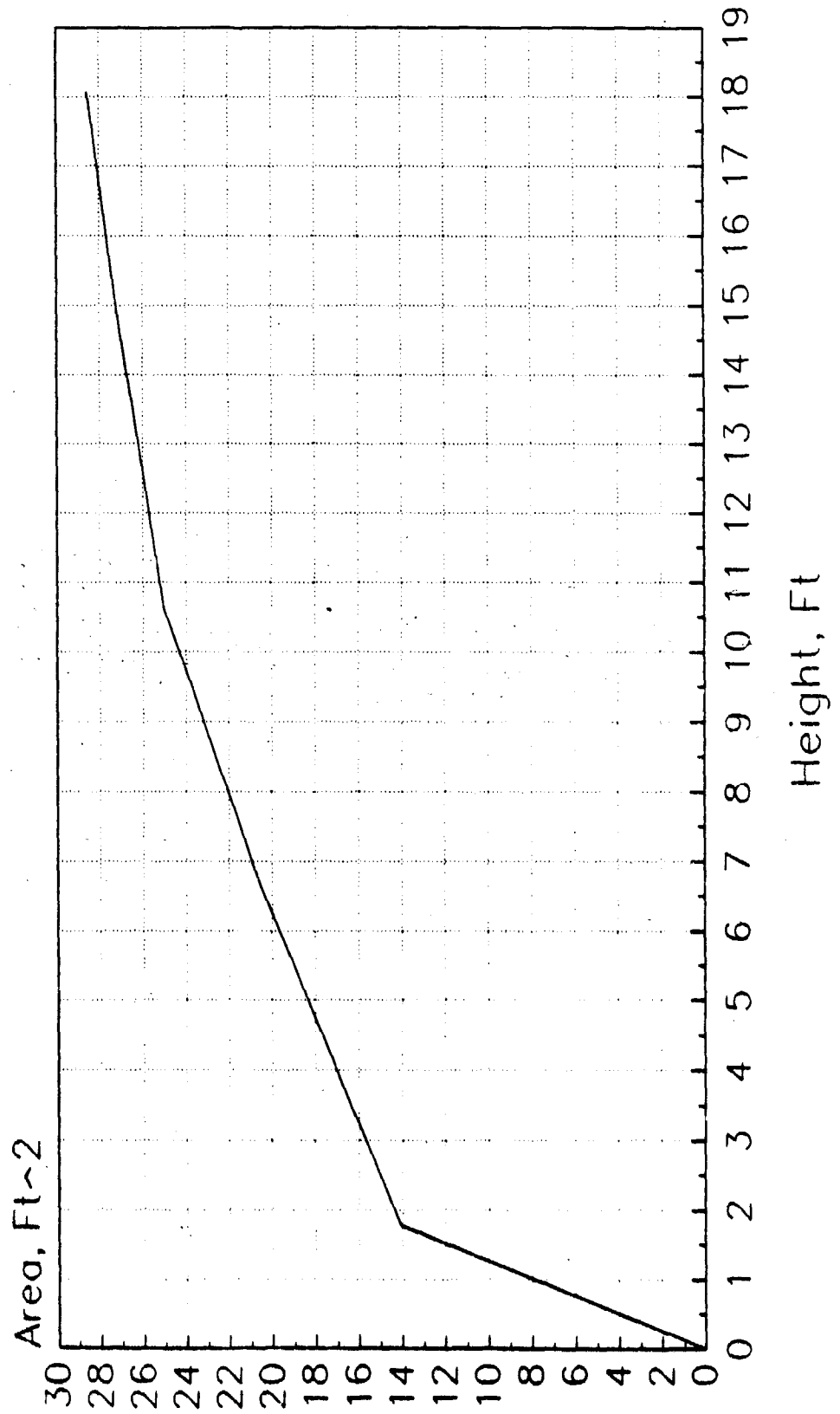
Manufacturers:

Source of Design:                        Phares & Balises

Drawing Reference:                        France - 4

# NOLWEN Flat Bottom Lattice Twr

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: NOLWEN II Type Lighted Buoy

Country of Use: France

Function: A deep water buoy that has a cylindrical hull of Nolwen type, a tail-tube and spar type superstructure.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,439 Lbs.

Buoy Draft: 12.55 Ft.

Overall Buoy Length: 26.25 Ft.

Focal Height of Light: 10.71 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 3.37 Ft.  
Minimum: 2.51 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Steel

Coating/Coloring System: Epoxy-Zinc Silicate

Subdivision: One Compartment

Hull Type: Cylindrical

Counterweight Type: Bolted To Tail-Tube

RELATED EQUIPMENT

Number of Power Sources: 2  
Type of Power Sources: Electric Batteries  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload: Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type: Lateral/Cardinal  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.9 Nmi.  
Radar Range: 4.5 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:



ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    24 Mos.

Maintenance Notes:

Special Features:

Buoy hull is cylindrical only as different from other Nolwen buoys which have cylindrical/conical hulls. Spar type tower contains electrical equipment.

Stability Notes:

May be powered by propane or butane gas containers installed in buoy hull (special compartment). Weight of chain is 2650 lbs.

General Notes

Radar reflector is omnidirectional.

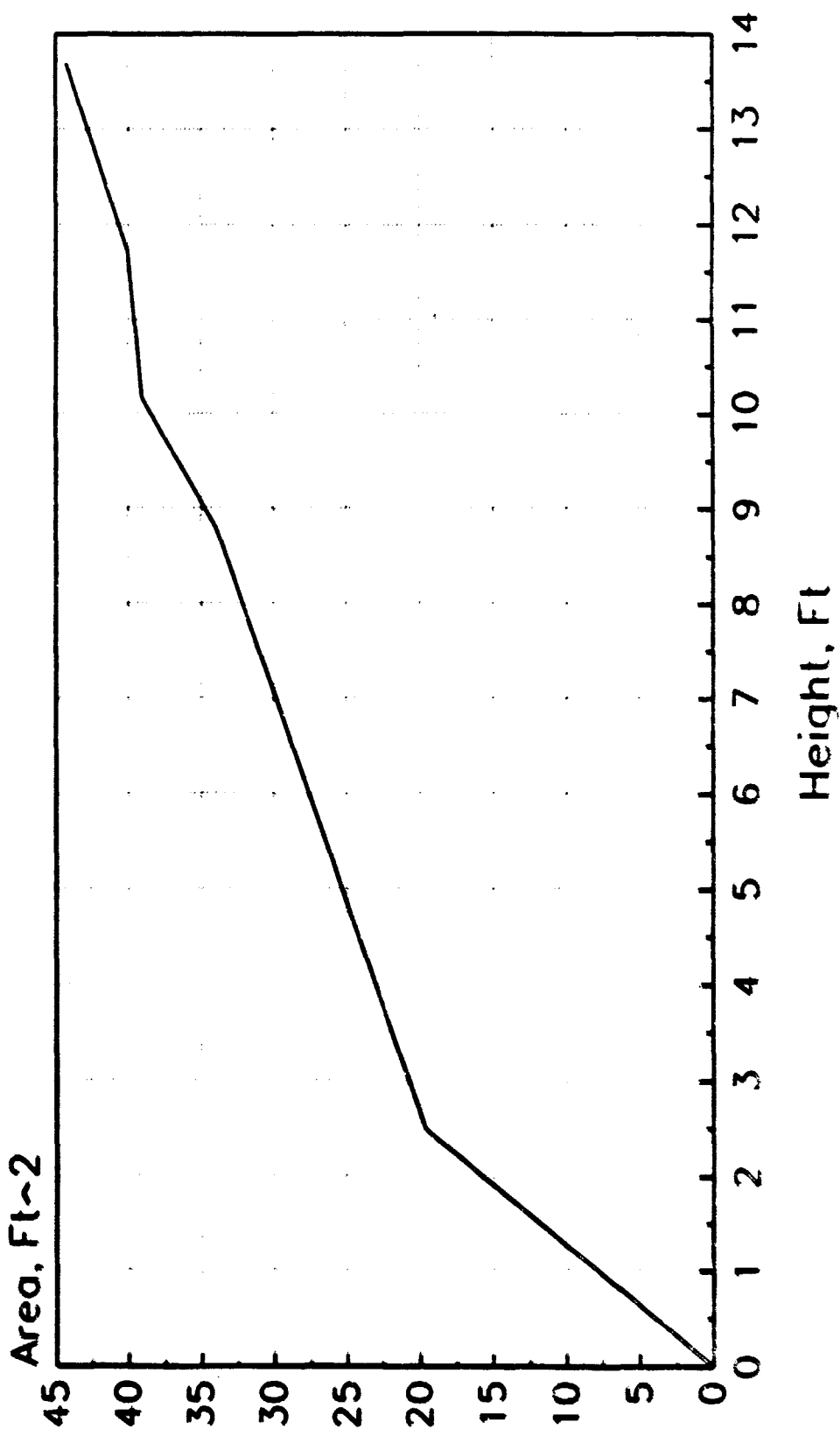
Manufacturers:

Source of Design:                        Phares & Balises

Drawing Reference:                        France - 6

# NOLWEN II Type Lighted Buoy

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: NOLWEN Tail-Tube Solar

Country of Use: France

Function: Variation of Nolwen type buoy for use in deep water areas.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 7,494 Lbs.

Buoy Draft: 13.36 Ft.

Overall Buoy Length: 34.63 Ft.

Focal Height of Light: 14.68 Ft.

Buoy Beam or Diameter: 7.87 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 1.72 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.25 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark : Steel  
Counterweight: Steel

Coating/Coloring System: Epoxy/Zinc Silicate

Subdivision: One Compartment

Hull Type: Cylindrical/Conical

Counterweight Type: Bolted to tail-tube

RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: Solar panels and batteries

Lighting Equipment: Electric lantern

Sound Equipment:

Other Payload: 600 or 300mm dia radar refletr

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 1.378 In.  
Type: Steel Chain

Sinker Size: 0 Lbs.

Topmark Type: Any lateral/cardinal

Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 4.6 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost: Replacement: \$16,350  
Preparation: \$0  
Monthly Servicing: \$0

Service Life: 0.0 Yrs.

Maintenance Interval: 24 Mos.

Maintenance Notes:

The buoy hull is a steel tank and is inspected by Burcan Verites as pressure vessel

Special Features:

Can have heavy duty (Lourde) or light duty (Legere) type lanterns with "Metropole" or "Equateur" type solar equipment.

Stability Notes:

Roll period 4.37 sec.

General Notes

Buoy weight with solar equipment and 100 ft. of 1.378 dia. chain is 9698 lbs.

Radar reflector is omnidirectional.

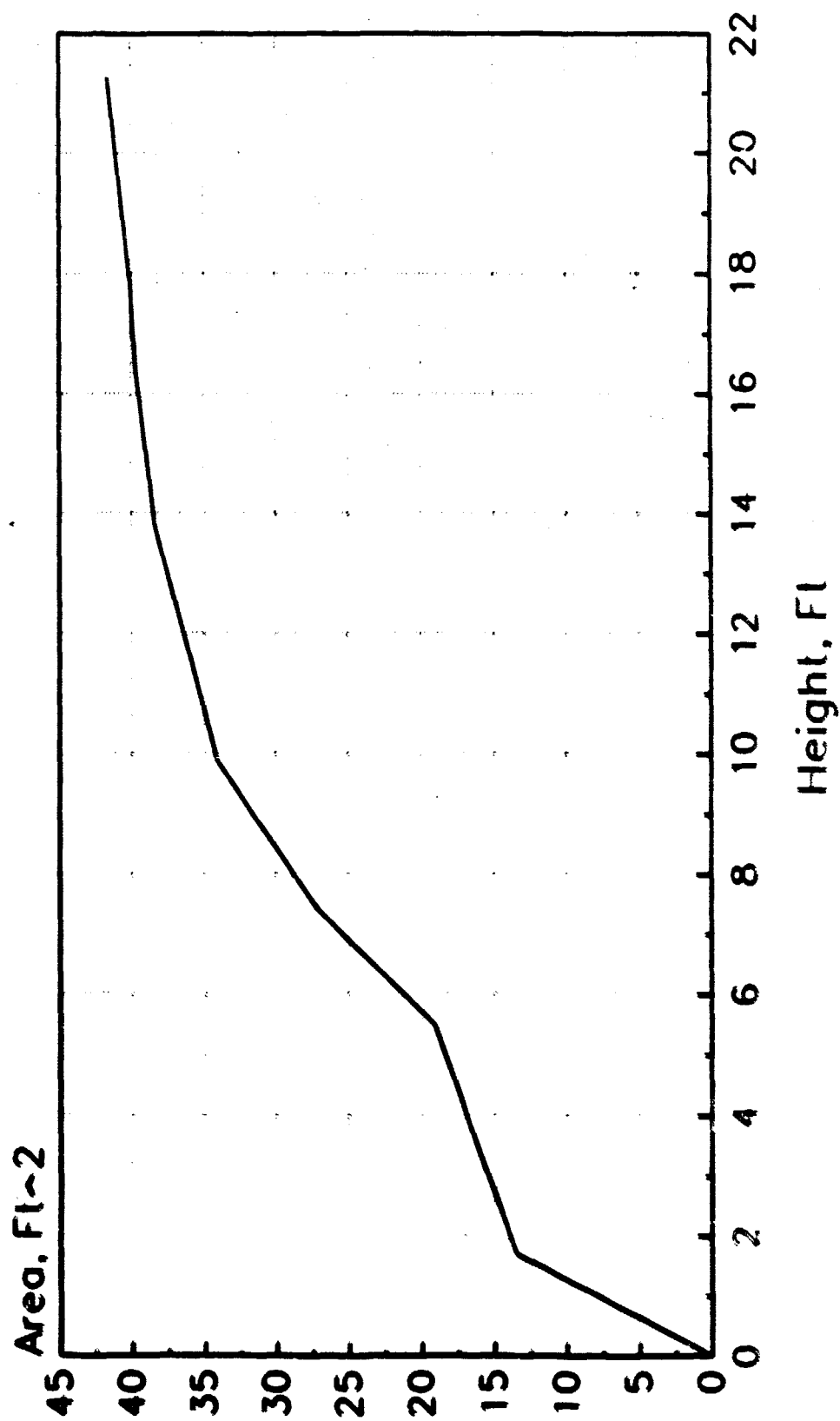
Manufacturers:

Source of Design: Phares & Balises

Drawing Reference: France - 3

# NOLWEN Tail--Tube Solar

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Polyester Buoy

Country of Use: France

Function: For marking rivers and protected shallow water areas. Can be fitted with spherical, conical, or cylindrical towers.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 181 Lbs.

Buoy Draft: 1.23 Ft.

Overall Buoy Length: 5.15 Ft.

Focal Height of Light: 2.93 Ft.

Buoy Beam or Diameter: 3.48 Ft.

Freeboard: No Mooring: 1.17 Ft.  
Minimum: 0.86 Ft.

Pounds Per Inch Immersion: 34 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 368 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Polyester  
Hull Filling :  
Tower : Polyester  
Topmark :  
Counterweight: Concrete

Coating/Coloring System:

Subdivision: Two Compartment

Hull Type: Bi-Conical

Counterweight Type: Internal

## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: Magnesium Bioxyde Batteries

Lighting Equipment: Electric Lantern

Sound Equipment:

Other Payload:

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Lateral

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: PM

Nominal Visual Range of Daymark: 1.2 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:



## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:  
                         Nominal life of lamp 500 hours.

## Special Features:

A photocell installed on the spherical tower controls the functioning of the light. Flash sequence is controlled by an electronic programmer.

## Stability Notes:

Weight of bare buoy hull is 128 lbs.

## General Notes

Cylindrical (can) and conical (nun) type buoys can also be equipped with four solar panels (5W, 12V) and 12V 24 Ah battery.

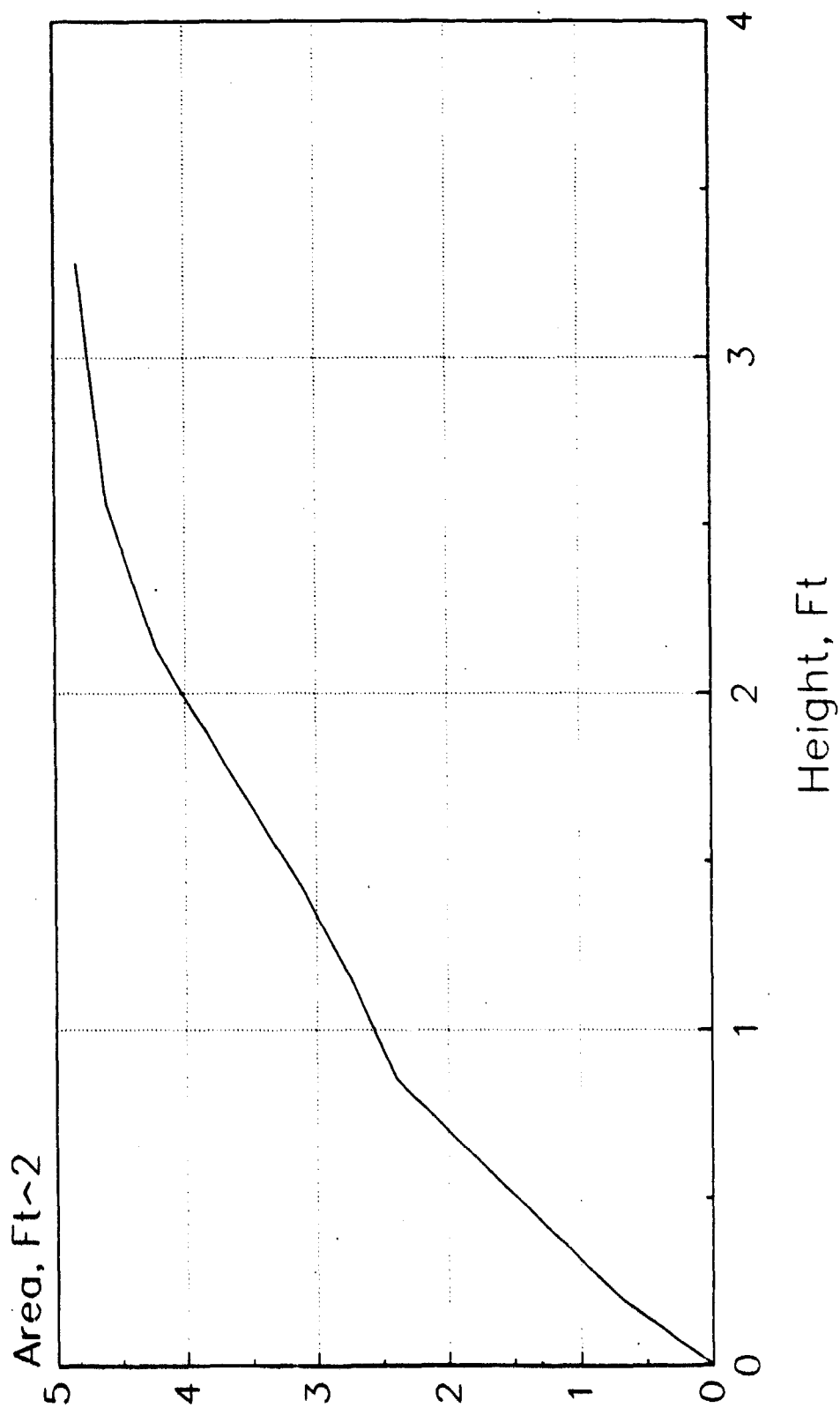
## Manufacturers:

Source of Design:                        Phares & Balises

Drawing Reference:                        France-7, 8, 9

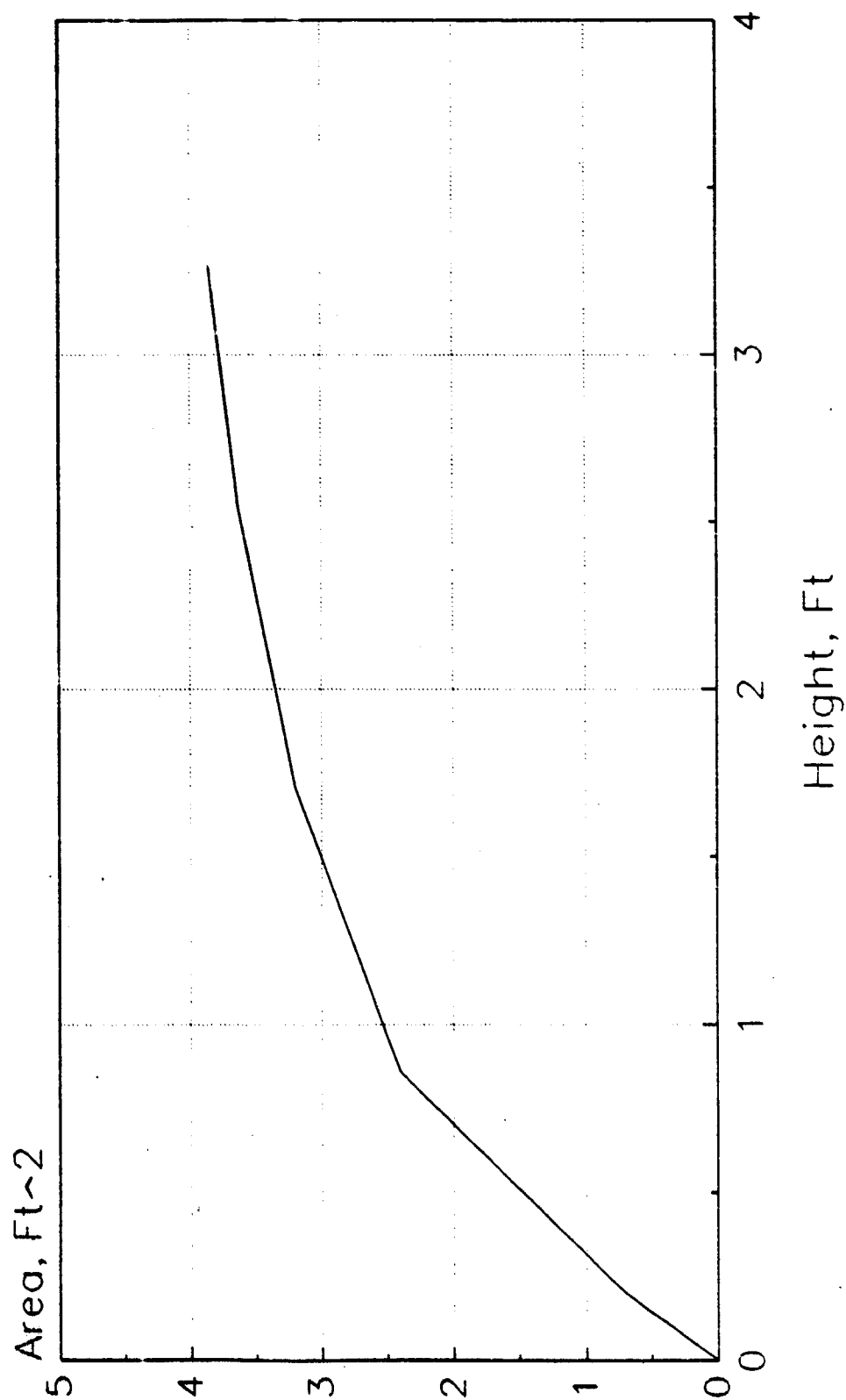
# Polyester Buoy (Spherical)

Cumulative Area \_\_\_\_\_



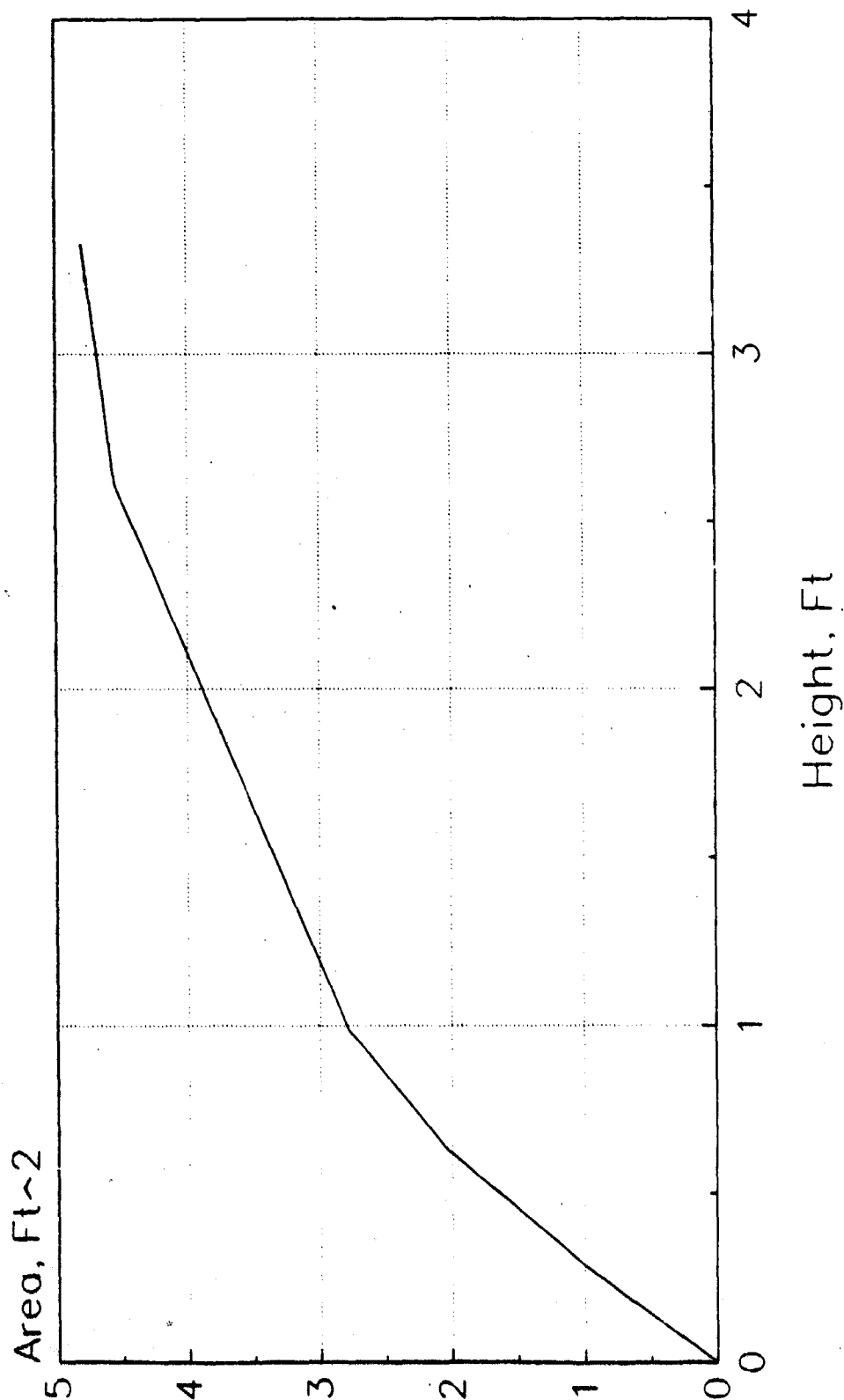
# Polyester Buoy (Conical)

Cumulative Area \_\_\_\_\_



# Polyester Buoy (Cylindrical)

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: ARTEMIS Lighted Buoy

Country of Use: France MFG-1

Function: A hemispherical shaped buoy developed by  
Gisman Co.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,556 Lbs.

Buoy Draft: 4.59 Ft.

Overall Buoy Length: 16.40 Ft.

Focal Height of Light: 11.81 Ft.

Buoy Beam or Diameter: 9.00 Ft.

Freeboard: No Mooring: 1.64 Ft.  
Minimum: 1.29 Ft.

Pounds Per Inch Immersion: 266 Lbs.

Metacentric Height: 4.30 Ft.

Reserve Buoyancy: 9,560 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP Composite  
Hull Filling : Closed Cell Foam  
Tower : GRP  
Topmark :  
Counterweight: Stl Shot And Rings

Coating/Coloring System:

Subdivision: Hull Filled

Hull Type: Hemispherical

Counterweight Type: Fixed&Variable Rings

RELATED EQUIPMENT

Number of Power Sources: 6  
Type of Power Sources: 5 Solar Panels And Battery  
Lighting Equipment: Electric Lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 10 Ft.  
Maximum: 100 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

## Special Features:

Superstructure is a tube with a pentagonal platform at mid-height for solar panels. At top of the slanted panels is another pentagonal platform supporting the lantern and the topmark.

## Stability Notes:

Roll period: 3.8 sec.

## General Notes

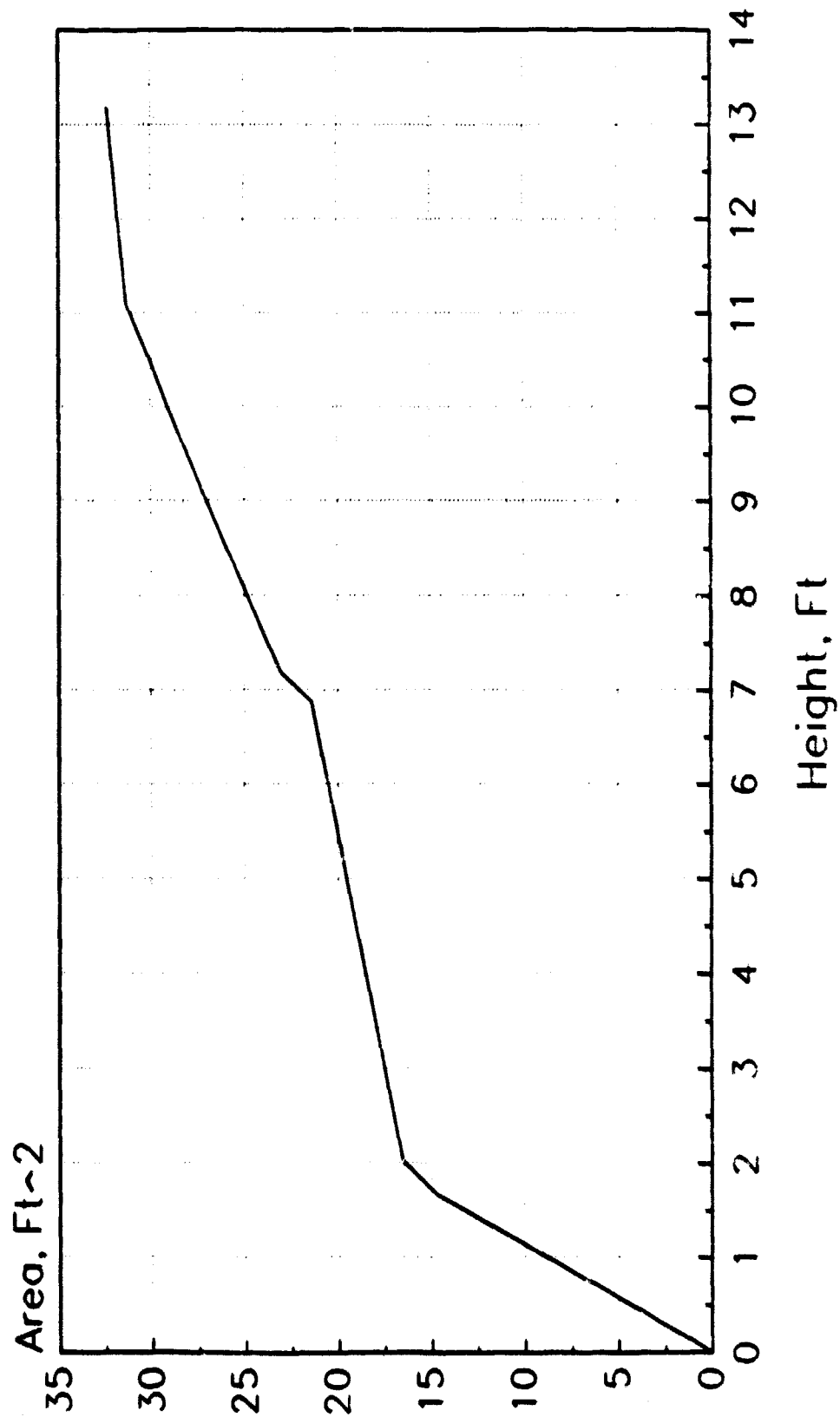
Manufacturers:                            Gisman Co.

Source of Design:                        Gisman

Drawing Reference:                       France MFG 1-1

# ARTEMIS Lighted Buoy

Cumulative Area





## GENERAL INFORMATION

Name of Buoy: DAPHNE Lighted Buoy

Country of Use: France MFG-1

Function: A new toroid shaped buoy developed by  
Gisman Co.

Date Of Last Update For This Record: 07/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 2,476 Lbs.

Buoy Draft: 1.80 Ft.

Overall Buoy Length: 16.00 Ft.

Focal Height of Light: 10.80 Ft.

Buoy Beam or Diameter: 8.53 Ft.

Freeboard: No Mooring: 2.13 Ft.  
Minimum: 1.97 Ft.

Pounds Per Inch Immersion: 191 Lbs.

Metacentric Height: 3.84 Ft.

Reserve Buoyancy: 7,750 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : GRP Composite  
Hull Filling : Closed Cell Foam  
Tower : GRP  
Topmark :  
Counterweight:

Coating/Coloring System:

Subdivision: Hull Filled

Hull Type: Double Toroid

Counterweight Type: Inside Skirt

RELATED EQUIPMENT

Number of Power Sources: 6

Type of Power Sources: 5 Solar Panels & Battery

Lighting Equipment: Electric Lantern

Sound Equipment:

Other Payload:

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Cardinal

Number of Padeyes: 6

OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 0.0 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 10 Ft.  
Maximum: 100 Ft.

Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:            \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

Maintenance Notes:

Special Features:

Superstructure is a pyramid of five tubular legs supporting two pentagon shaped platforms: the lower for solar panels, the upper for the lantern and topmark. ●

Stability Notes:

Roll period: 4.2 sec. ●

General Notes

The buoy skirt has holes at the bottom part. ●

Manufacturers:                            Gisman

Source of Design:                         Gisman

Drawing Reference:                        France MFG 1-2 ●

## GENERAL INFORMATION

Name of Buoy: Inland lighted STD steel

Country of Use: Germany

Function: Lighted version of the standard inland waterways buoy. The original name is "Yellow Light Buoy" and is used for marking anchor locations.

Date Of Last Update For This Record: 11/09/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 2.95 Ft.

Overall Buoy Length: 7.40 Ft.

Focal Height of Light: 3.87 Ft.

Buoy Beam or Diameter: 3.44 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 880 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Sheet Steel (1.75mm)  
Hull Filling : Rigid Polyurethane  
Tower :  
Topmark : Ployethylene  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & Fluorescent Colors

Subdivision: Hull Filled

Hull Type: Cylindrical/Conical

Counterweight Type: Ringson ExternalTube

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Battery Set  
Lighting Equipment: GV 0.71A Signal Lantern  
Sound Equipment:  
Other Payload: Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.394 In.  
Type: Chn/WR/Plast Rope  
Sinkers Size: 400 Lbs.  
Topmark Type:  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM  
Nominal Visual Range of Daymark: 1.4 Nmi.  
Radar Range: 1.9 Nmi.  
Maximum Current: 3.5 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: 3M Scotchlite Eng. Gr. Series 2270

ADDITIONAL DATA

Cost:                    Replacement: \$1,440  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                    10.0 Yrs.

Maintenance Interval:            24 Mos.

Maintenance Notes:

Can be handled by two persons or by davits on a ton boats.  
Special care needed in welding sheet steel skin. Only minor  
local buring of the PU foam is allowable.

Special Features:

Stability Notes:

Sinker size given is for direct mooring form the side in low  
current areas.

General Notes

Cost info from MR. Kuhlbrodt of SZVF  
(Seezeichenversuchsfeld)

Radar reflector is omnidirectional.

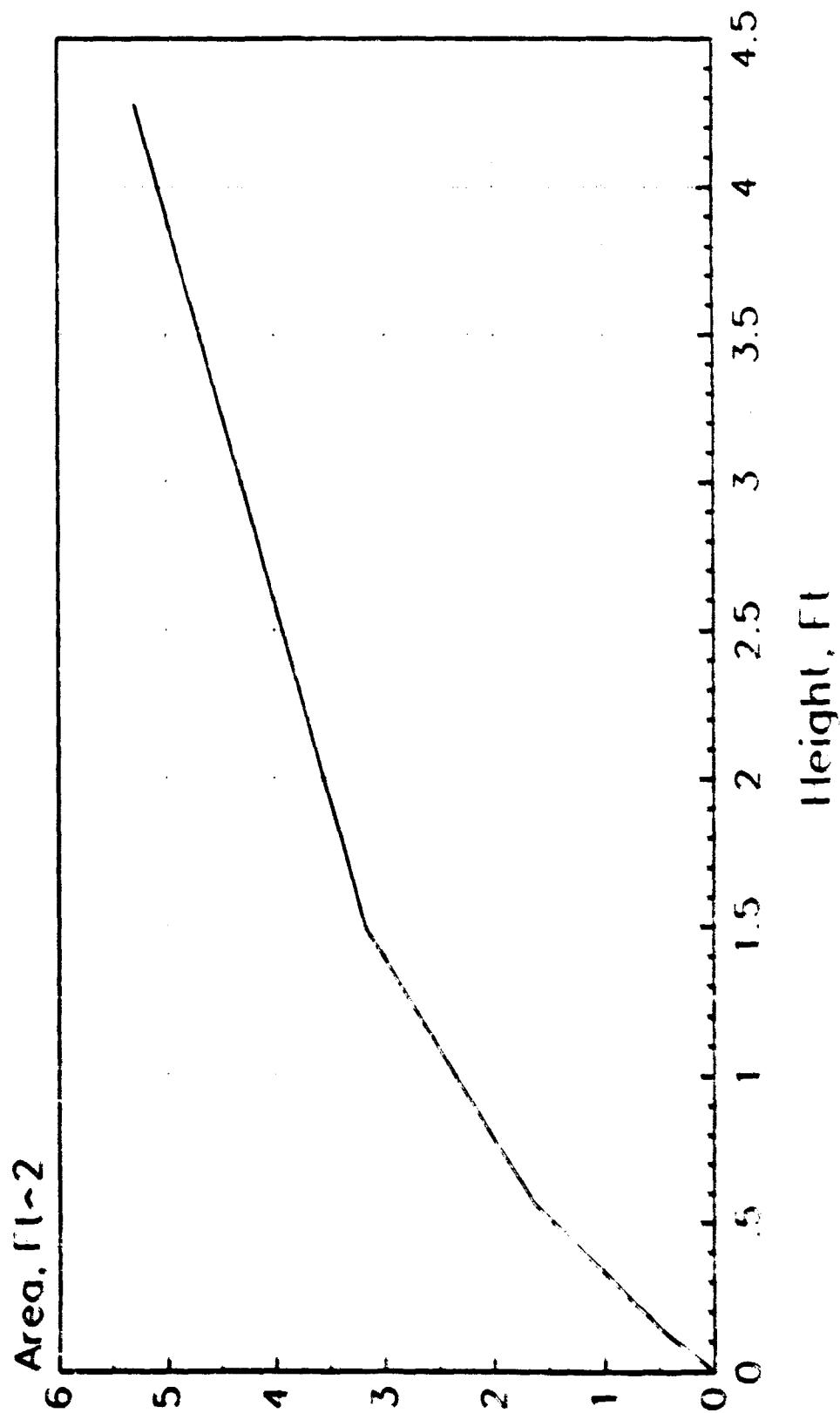
Manufacturers:                    Weiselerbojen

Source of Design:                SZVF

Drawing Reference:               Germany-9

# Inland Lighted STD Steel

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Inland Unlighted STD Steel

Country of Use: Germany

Function: Original name: Binnenfahrwassertonne.  
A standard buoy developed in 1970 for  
use in all German inland waterways.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 106 Lbs.

Buoy Draft: 0.00 Ft.

Overall Buoy Length: 7.09 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 3.44 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 880 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Sheet Steel (1.75mm)  
Hull Filling : Rigid Polyurethane  
Tower :  
Topmark : Polyurethylene  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary and Fluorescent Color

Subdivision: Hull Filled

Hull Type: Cylindrical/Conical

Counterweight Type: External Tube-rings



RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources:  
Lighting Equipment:  
Sound Equipment:  
Other Payload: Reflector built-in to topmark  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.394 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: Chn/Wr/Plastic Rope  
Sinker Size: 400 Lbs.  
Topmark Type: Can/Nun/Ball/Spar  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: PM  
Nominal Visual Range of Daymark: 1.7 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 3.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type: 3M Scotchlite Eng. Gr. Ser.3270

ADDITIONAL DATA

Cost:                    Replacement:    \$650  
                         Preparation:       \$0  
                         Monthly Servicing:    \$0

Service Life:                            10.0 Yrs.

Maintenance Interval:                    24 Mos.

Maintenance Notes:

Can be handled manually by two persons or with davits on aton boats. Can be repaired without problems but with special care in welding sheet steel skin. Only minor local burining of the PU foam is allowable.

Special Features:

This buoy may be equipped with can or nun or ball or a cylindrical spar (Bober) type topmarks. It has also been manufactured in GRP instead of steel. Weight of the GRP buoy is 82 lbs.

Stability Notes:

Sinker size shown (400 lbs) is for direct mooring in low current areas. In high current areas a ground chain is also used. In waters with shifting and/or rock & gravel bottom, chain may be shackled to up to 900 lbs sinkers, or stlpiles.

General Notes

Weight/Dimensions and cost shown are for the version with a can or nun type daymark (with built-in radar reflectors) and with tail tube and two ballast weights. Cost info from SZVF.

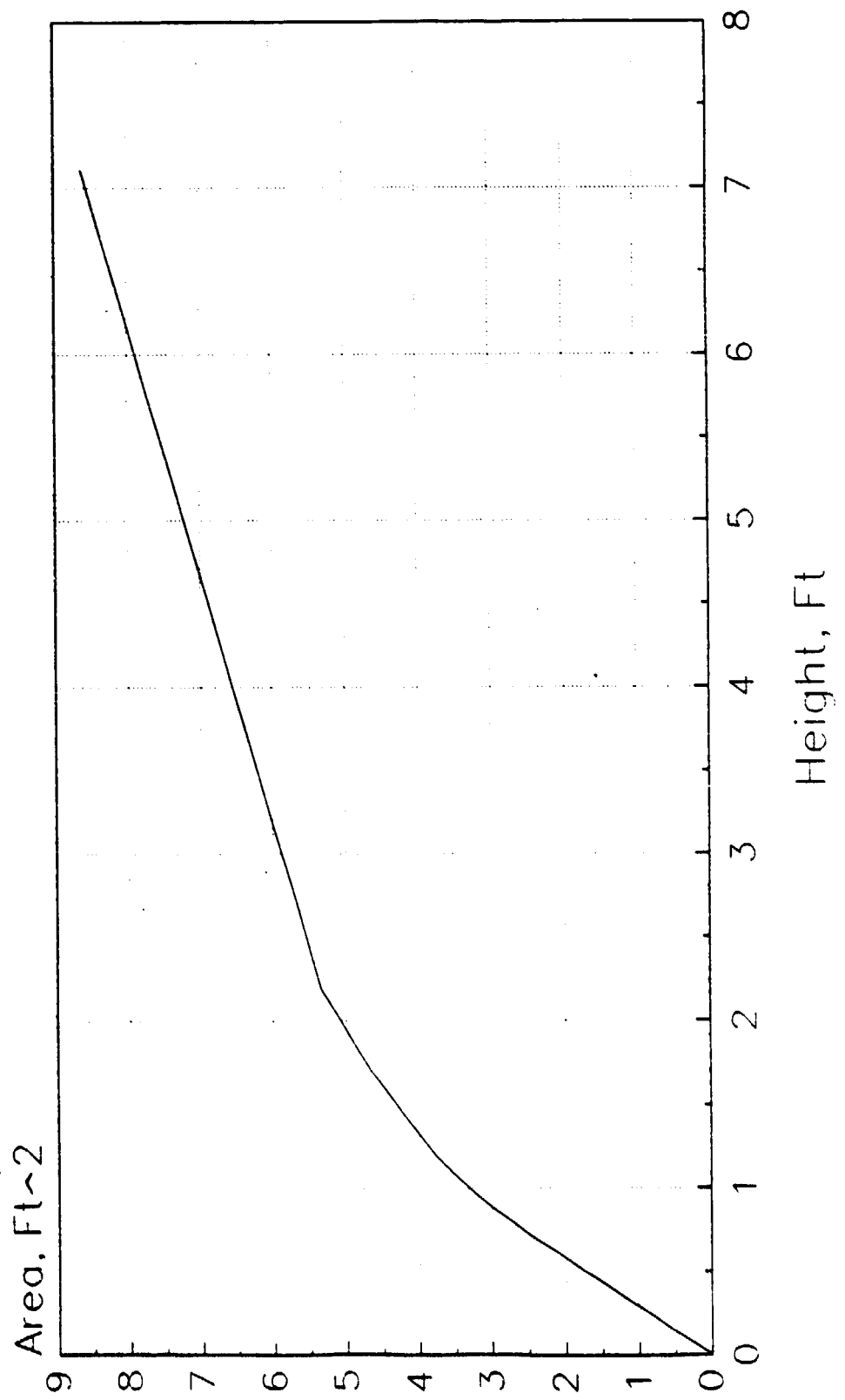
Manufacturers:                            Weiselerbojen

Source of Design:                        Seezeichen VF

Drawing Reference:                        Germany-10

# Inland Unlighted STD Steel

Cumulative Area \_\_\_\_\_



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 61

Country of Use: Germany

Function: A lighted buoy of 1961 design for use in  
port approaches and coastal areas up to  
a water depth of 50 ft.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 10,839 Lbs.

Buoy Draft: 14.70 Ft.

Overall Buoy Length: 35.10 Ft.

Focal Height of Light: 12.14 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 0.72 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 2.13 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: External Half Rings

## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Propane Container - 300 Kg

Lighting Equipment: Gas Lantern

Sound Equipment:

Other Payload:

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Cardinal

Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: SM

Nominal Visual Range of Daymark: 2.3 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 50 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:         \$0  
                     Monthly Servicing:       \$0

Service Life:                        0.0 Yrs.

Maintenance Interval:                0 Mos.

## Maintenance Notes:

Propane container can only be removed and replaced after removing the superstructure. Since it is very difficult to do this at sea, propane replacement should be done on shore during overhaul.

## Special Features:

Buoy hull and tailtube and superstructure are interchangeable with those of the 1972 and 1982 design lighted buoys.

## Stability Notes:

Period of roll is 4.33 sec.

## General Notes

Tail tube may be of the 3-leg open structure or monotude closed-end design.

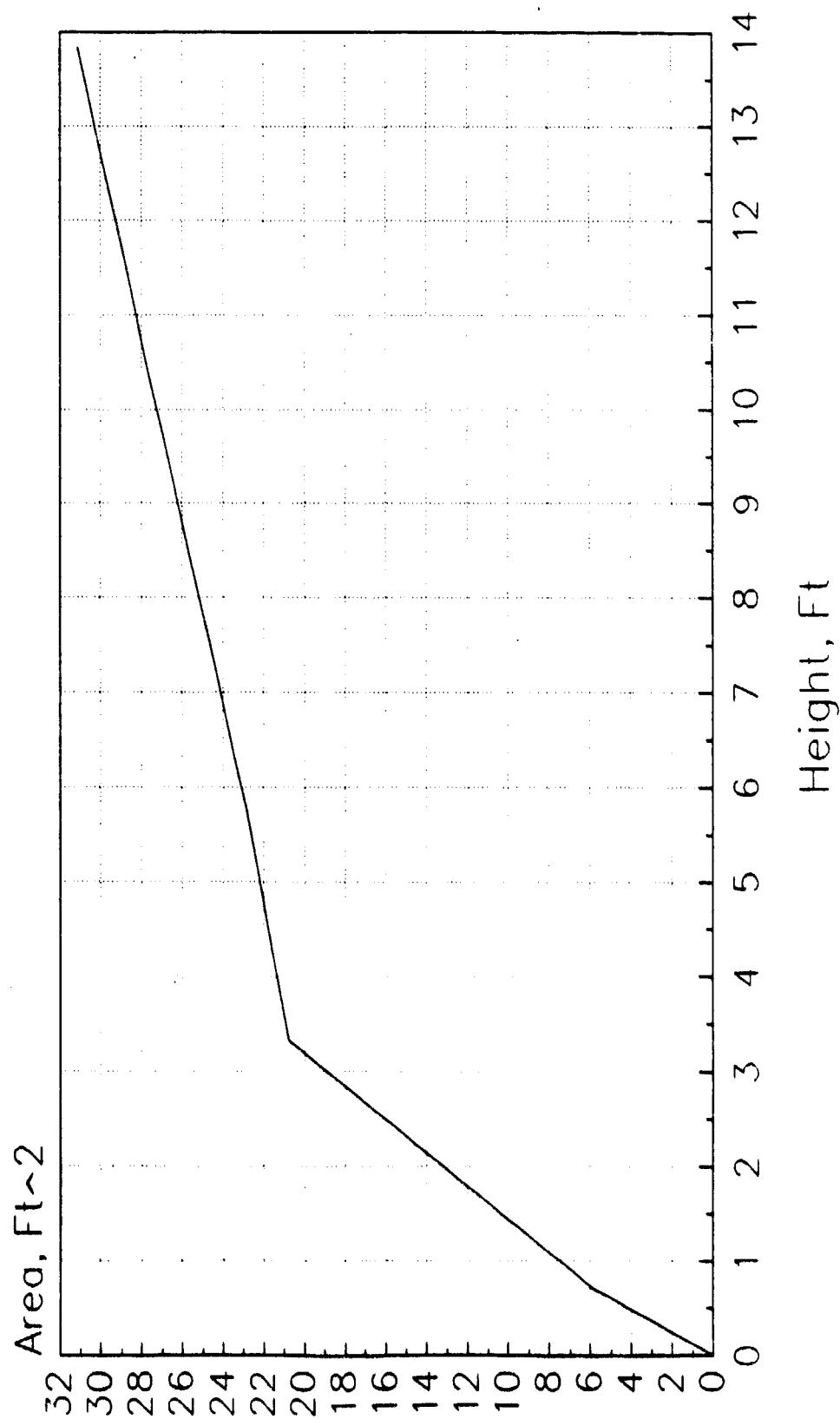
Manufacturers:                        F Hebold

Source of Design:                      Seezeichen VF

Drawing Reference:                    Germany-3

# Leuchttonne 61

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 61 with reflector

Country of Use: Germany

Function: Modified version of the 1961 lighted buoy. Superstructure is altered to contain a radar reflector so that the buoy can be used in deeper waters.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,082 Lbs.

Buoy Draft: 14.78 Ft.

Overall Buoy Length: 36.25 Ft.

Focal Height of Light: 15.06 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 0.69 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.64 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: External Half Rings



RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: 300 KG Propane Container ●  
Lighting Equipment: Gas Lantern  
Sound Equipment:  
Other Payload: SR-900 mm Radar Reflector ●  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In. ●  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3 ●

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi. ●  
Radar Range: 5.6 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft. ●  
Maximum: 50 Ft. ●  
Reflective Material Type: ●

ADDITIONAL DATA

Cost:                Replacement:        \$0  
                     Preparation:        \$0  
                     Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

Maintenance Notes:

Propane container replacement requires removal of  
superstructure.

Special Features:

Buoy hull, tailtube, and superstruture are interchangeable  
with those of the 1972 and 1981 design lighted buoys.

Stability Notes:

Period of roll is 5.46 sec.

General Notes

Tail tube may be of the 3-leg open structure or monotube  
closed-end design.

Radar reflector is omnidirectional.

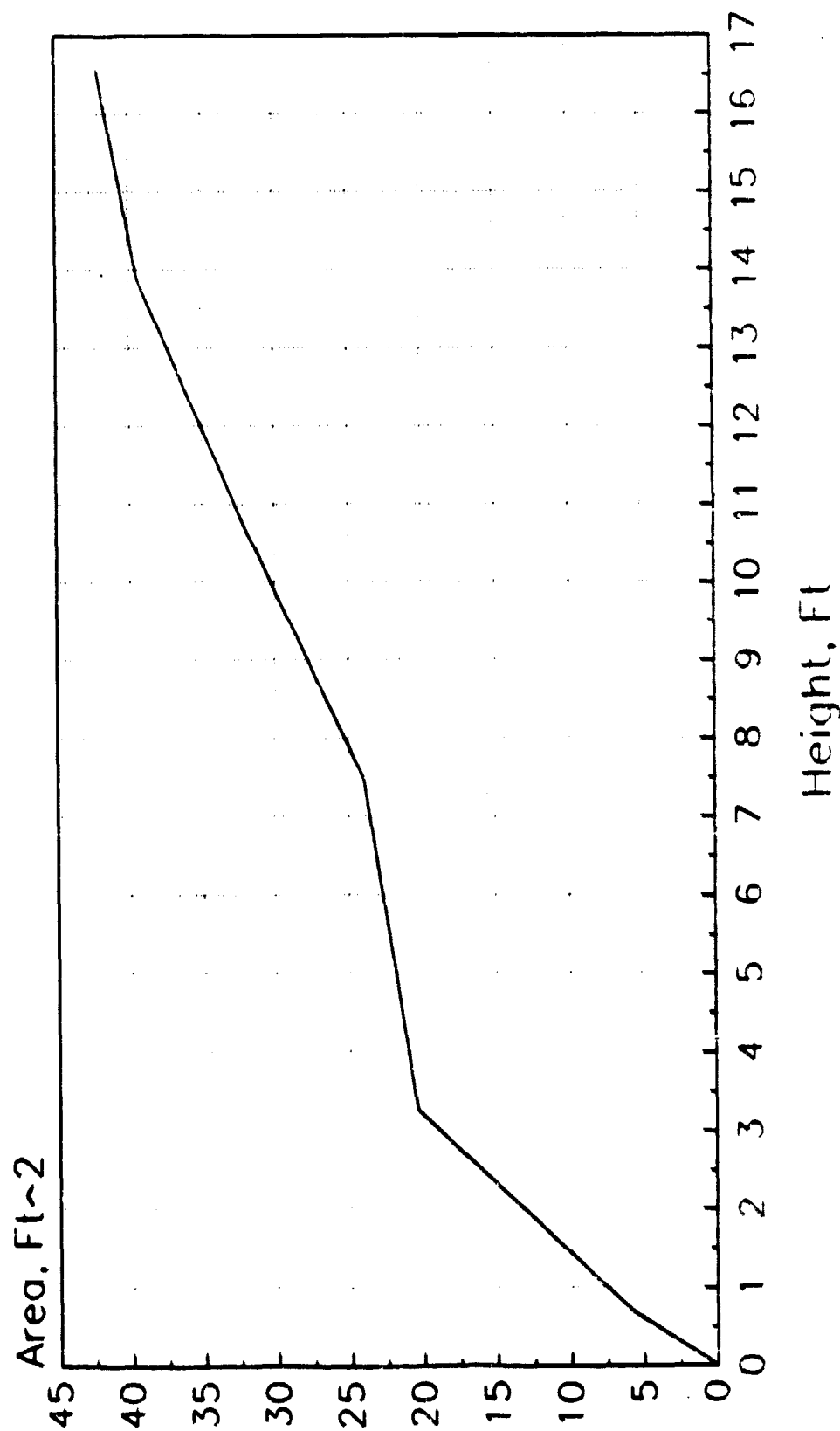
Manufacturers:

Source of Design:                            Seezeichen VF

Drawing Reference:                           Germany-4

# Leuchttonne 61 with Reflector

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 72

Country of Use: Germany

Function: A modified version of 1961 lighted buoy with hull thickness reduced from 12 to 6 mm and lighter superstructure for use in deep waters.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 8,962 Lbs.

Buoy Draft: 13.91 Ft.

Overall Buoy Length: 37.85 Ft.

Focal Height of Light: 13.71 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 1.51 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 2.53 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: External Half Rings

## RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: 300 KG Propane Bottle  
Lighting Equipment: Gas Lantern  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.4 Nmi.  
Radar Range: 0.0 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                   0 Mos.

## Maintenance Notes:

Propane container can only be exchanged after removing the superstructure.

## Special Features:

Hull, tube, tower, and their parts are interchangeable with the 1961 and 1981 design lighted buoys.

## Stability Notes:

Period of roll is 4.59 sec.

## General Notes

The superstructure of this buoy proved to be the weak point. Large radar reflectors could not be installed. Led to the 1981 lighted buoy design.

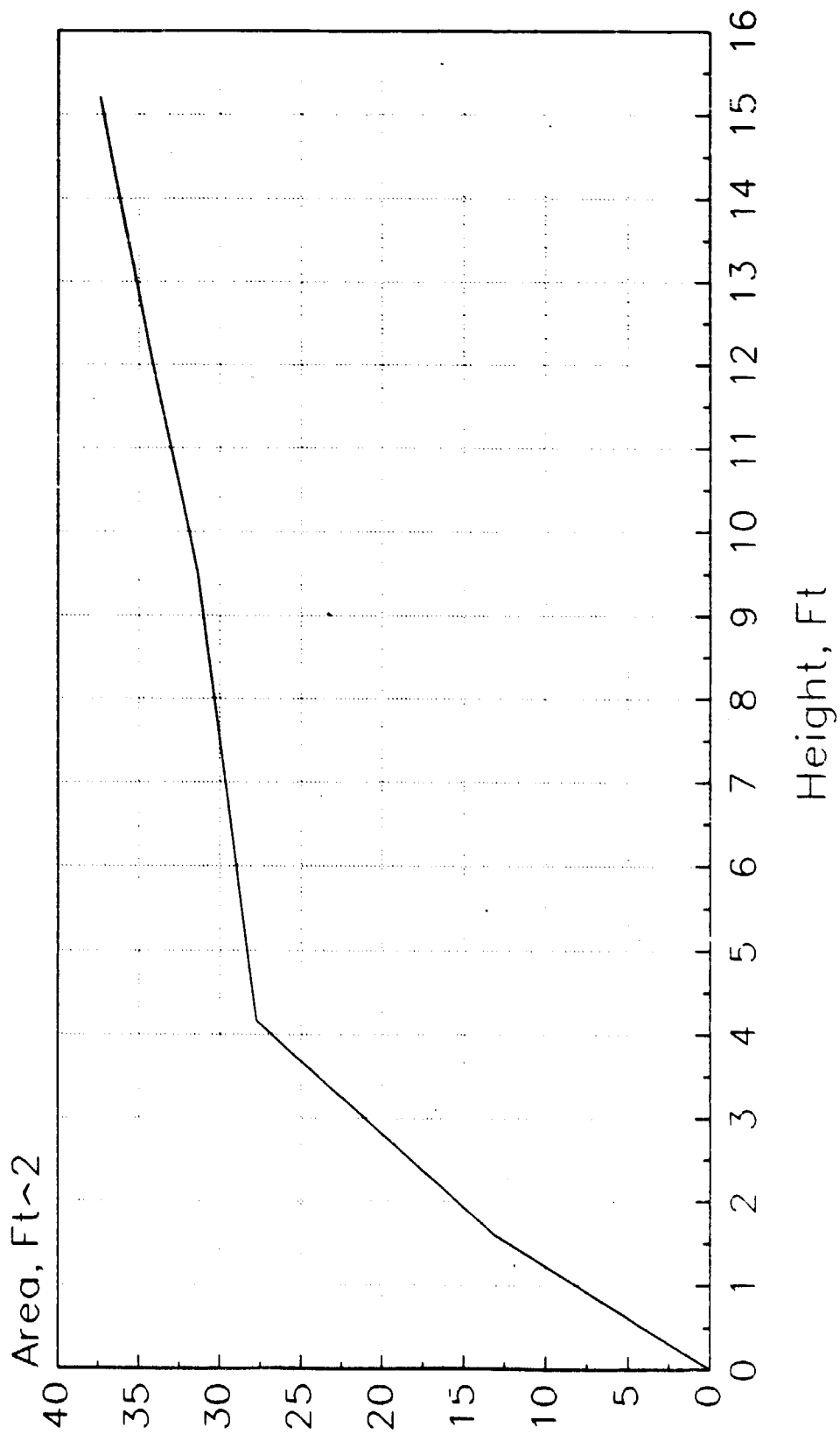
## Manufacturers:

Source of Design:                        Seezeichen VF

Drawing Reference:                       German-5

# Leuchttonne 72

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 81 Emden

Country of Use: Germany

Function: A modified version of standard 1981  
lighted ocean buoy using Emden style  
lantern support per dwg S985.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 11,085 Lbs.

Buoy Draft: 14.70 Ft.

Overall Buoy Length: 38.95 Ft.

Focal Height of Light: 14.97 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 0.69 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.64 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: External Half Rings



## RELATED EQUIPMENT

Number of Power Sources: 1

Type of Power Sources: Propane Container - 300 Kg

Lighting Equipment: Gas Lantern

Sound Equipment:

Other Payload: Radar Reflector - SR6 900 mm

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type: Cardinal

Number of Padeyes: 3

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 2.5 Nmi.

Radar Range: 5.4 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:        \$0

Service Life:                                0.0 Yrs.

Maintenance Interval:                        0 Mos.

## Maintenance Notes:

Replacement of propane container at site very difficult.  
Must be scheduled to coincide with buoy overhaul on shore.

## Special Features:

Tail Tube is interchangeable with all LT81, LT72, and LT61  
buoys.

## Stability Notes:

Roll period: 5.46 sec.

## General Notes

Radar reflector is omnidirectional.

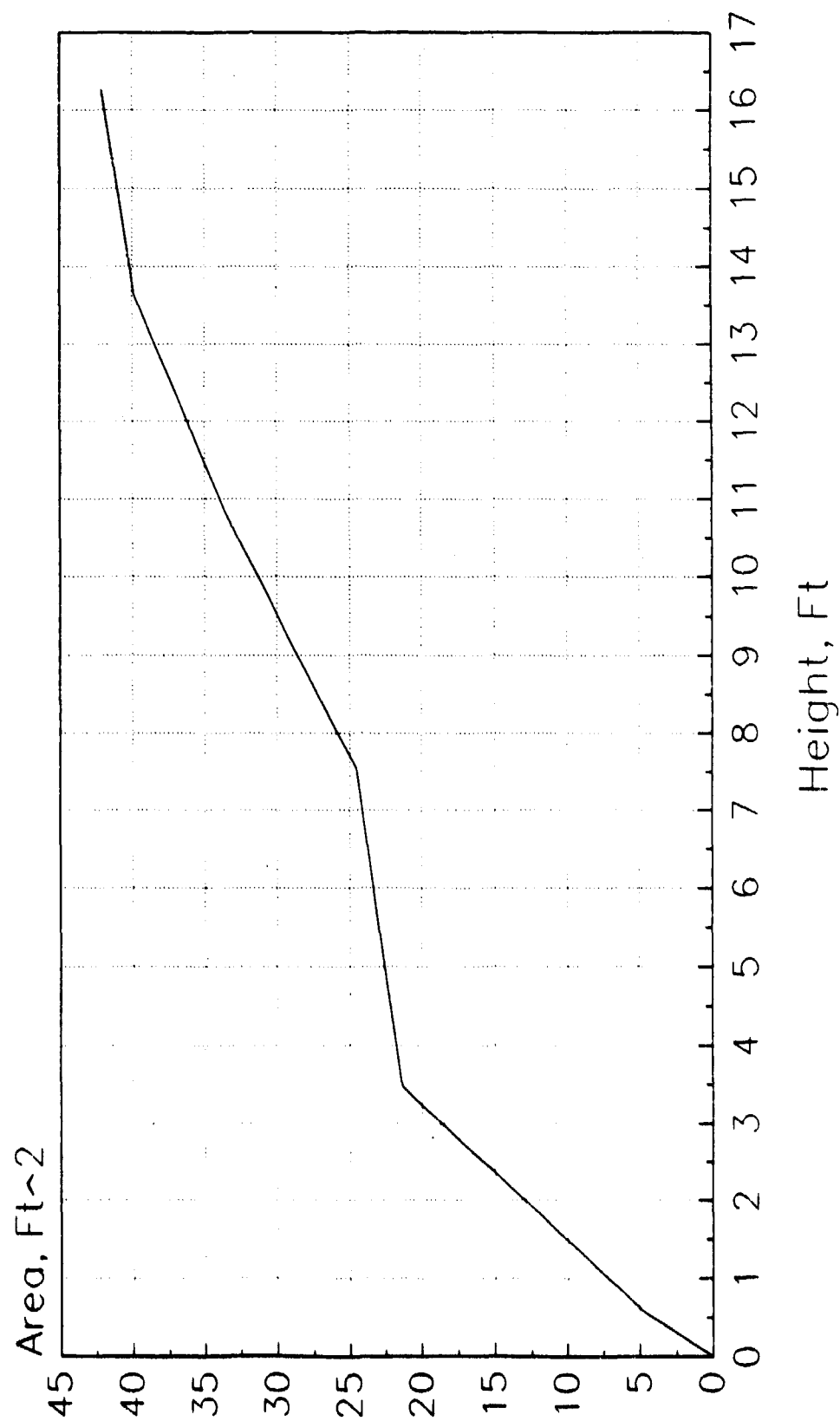
## Manufacturers:

Source of Design:                                Seezeichen VF

Drawing Reference:                                Germany-11

# Leuchttonne 81 Emden

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 81 standard

Country of Use: Germany

Function: A lighted ocean buoy developed in 1981  
by The Federal Waterways Authority -  
equipped with lantern support of dwg no.  
S924.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,360 Lbs.

Buoy Draft: 14.01 Ft.

Overall Buoy Length: 37.85 Ft.

Focal Height of Light: 14.73 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 1.41 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.85 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: Half rings-External

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: Propane Container - 300 Kg  
Lighting Equipment: Gas Lantern  
Sound Equipment:  
Other Payload: SR6-900 mm Dia Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 5.3 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:\$11,000  
                     Preparation:        \$0  
         Monthly Servicing:        \$0

Service Life:                        30.0 Yrs.

Maintenance Interval:                12 Mos.

Maintenance Notes:

Propane container can only be exchanged after removing the superstruture - exchange at sea is difficult - mainteance must be so scheduled that exchange can be made on shore.

Special Features:

Tail tubes, buoy hulls, superstruture and all parts thereof are interchangeable with those of the 1961 and 1972 design lighted buoys.

Stability Notes:

Period of rollf 5.48 sec.

General Notes

Tail tube may be there legged open structure or monotube closed design type.

Radar reflector is omnidirectional.

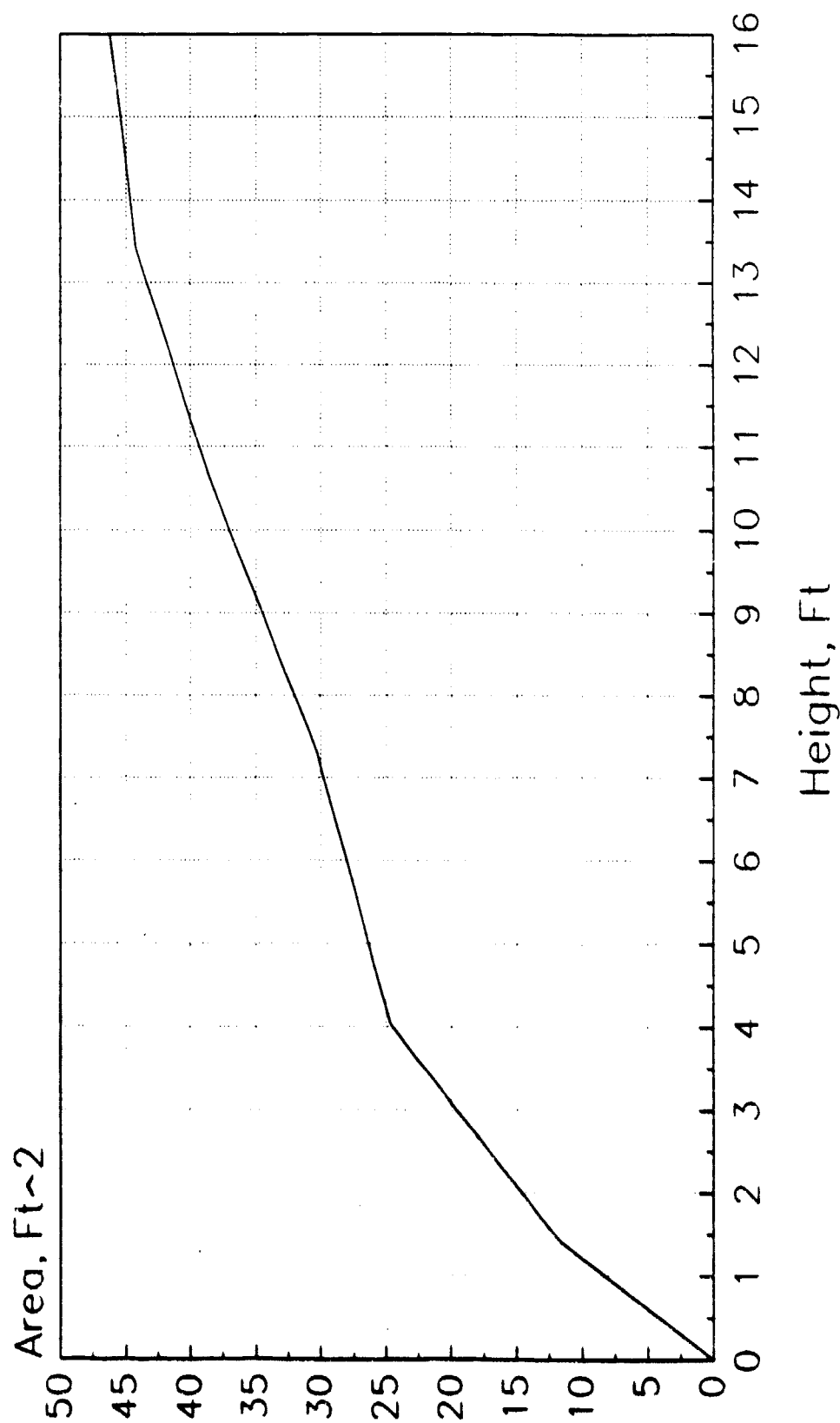
Manufacturers:                        F Hebold & Others

Source of Design:                     Seezeichen VF

Drawing Reference:                    Germany-6

# Leuchtonne 81 Standard

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 81-High Tower I

Country of Use: Germany

Function: An alternative version of standard 1981  
lighted ocean buoy with a 2 meter high  
lantern support per dwg S986.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 9,558 Lbs.

Buoy Draft: 14.07 Ft.

Overall Buoy Length: 48.79 Ft.

Focal Height of Light: 18.02 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 1.35 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 1.32 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: Extnl Half Rings



RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: 300 KG Propane Container  
Lighting Equipment: Gas Lantern  
Sound Equipment:  
Other Payload: SR-6 900mm Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type:  
Sinker Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 5.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                Replacement:\$11,000  
                     Preparation:     \$0  
         Monthly Servicing:     \$0

Service Life:                    30.0 Yrs.

Maintenance Interval:            12 Mos.

Maintenance Notes:

Propane container can only be replaced after removing the superstruture. Exchange at sea is difficult must be scheduled to coincide with overhaul period on shore.

Special Features:

Components including hull, superstructure, tailtube and their parts are interchangeable with the lighted buoys of 1961 and 1972 design.

Stability Notes:

Roll Period 7.1 sec.

General Notes

Tail tube may be or three leg open structure or closed end monotube design.

Radar reflector is omnidirectional.

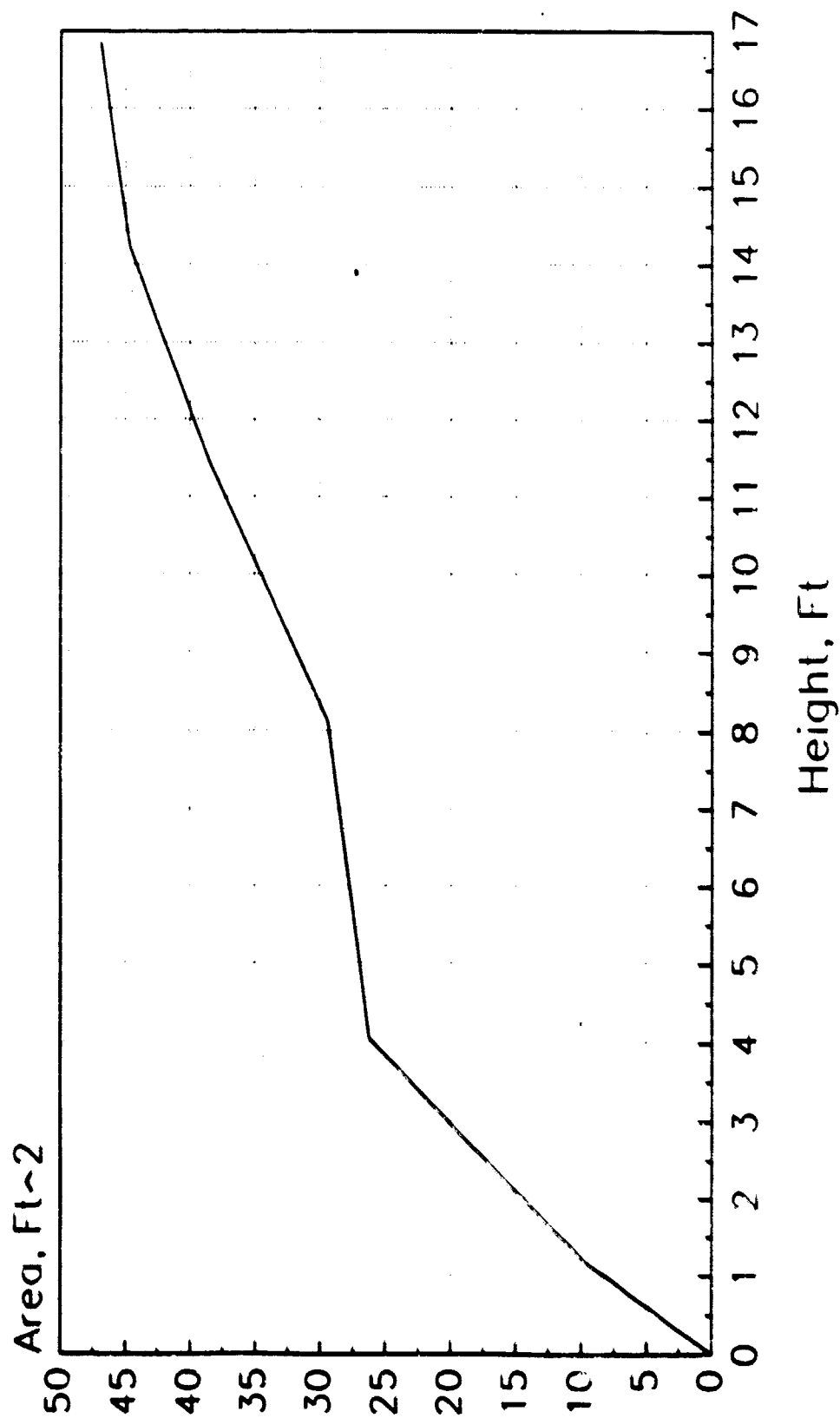
Manufacturers:

Source of Design:                Seezeichen VF

Drawing Reference:               Germany-8

# Leuchtonne 81 - High Tower I

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Leuchttonne 81-High Tower II

Country of Use: Germany

Function: An alternative version of standard LT 81  
with a 2 meter high lantern support per  
dwg S986 and 320 kg additional ballast.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 10,265 Lbs.

Buoy Draft: 14.27 Ft.

Overall Buoy Length: 48.79 Ft.

Focal Height of Light: 17.82 Ft.

Buoy Beam or Diameter: 8.20 Ft.

Freeboard: No Mooring: 1.15 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 2.10 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight: Cast Iron

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylindrical/Conical

Counterweight Type: External Half Rings

RELATED EQUIPMENT

Number of Power Sources: 1  
Type of Power Sources: 300 kg propane container ●  
Lighting Equipment: Gas lantern  
Sound Equipment:  
Other Payload: SF-6 900 mm reflector ●  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.  
Mooring Line: Size: 0.000 In. ●  
Type:  
Sinkers Size: 0 Lbs.  
Topmark Type: Cardinal  
Number of Padeyes: 3 ●

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.7 Nmi. ●  
Radar Range: 5.9 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft. ●  
Maximum: 0 Ft.  
Reflective Material Type: ●

ADDITIONAL DATA

Cost:                    Replacement:\$11,000  
                         Preparation:        \$0  
         Monthly Servicing:       \$0

Service Life:                    30.0 Yrs.

Maintenance Interval:            12 Mos.

Maintenance Notes:

Propane container can only be replaced after removing the superstructure. Exchange at sea is difficult - must be scheduled to coincide with overhaul period on shore.

Special Features:

Components of this buoy including tail tube, buoy hull, superstructure and parts thereof are interchangeable with the 1961 and 1972 design lighted buoys.

Stability Notes:

Period of roll 5.94 sec.

General Notes

Tail tube may be of three leg open structure or closed end monotube design.

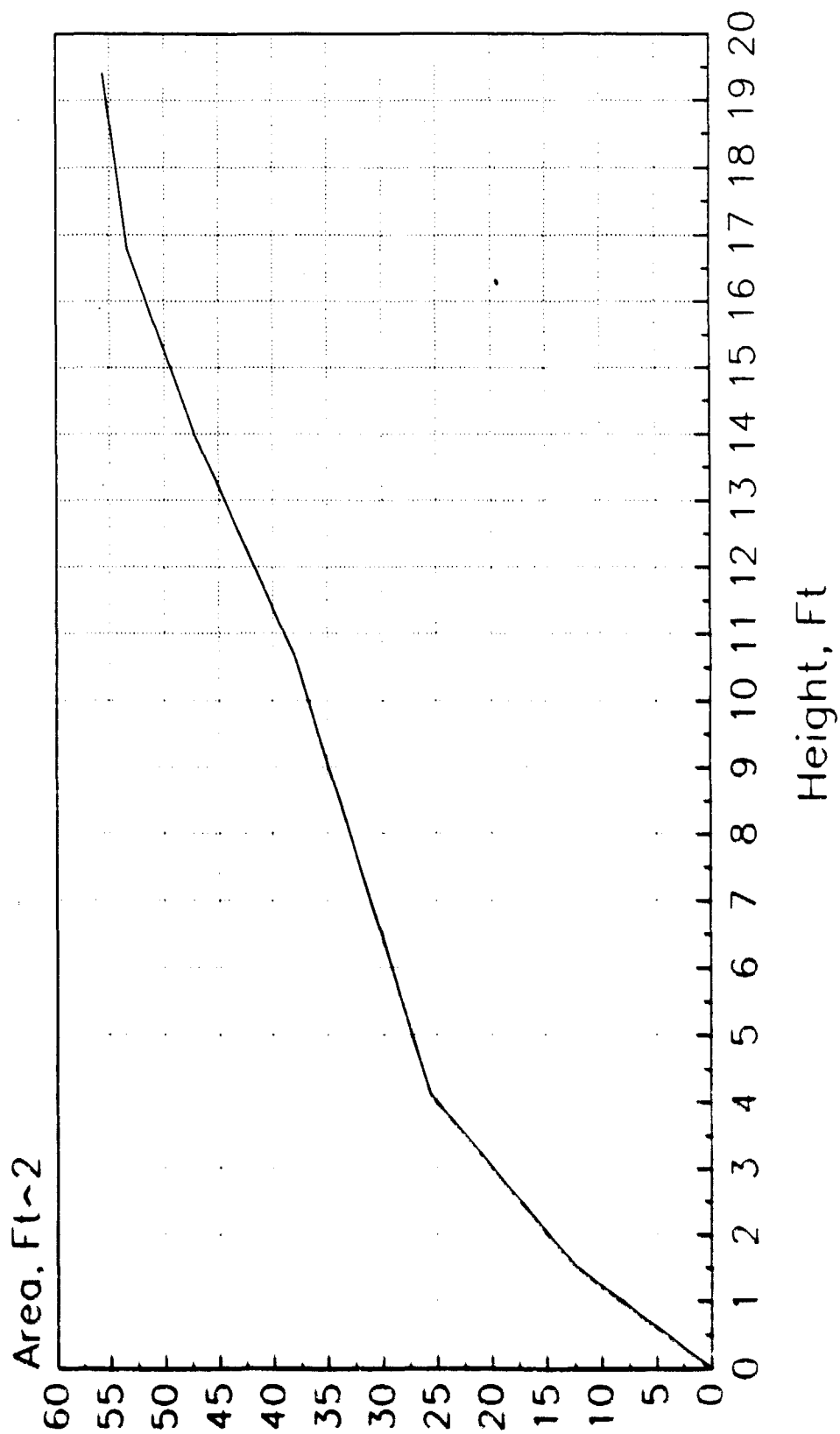
Manufacturers:                    F Hebolde & Others

Source of Design:                Seezeichen VF

Drawing Reference:               Germany-7

# Leuchtonne 81 - High Tower II

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: Modular Buoy

Country of Use: Germany

Function: A large experimental buoy developed with the purpose of replacing lightships with floating aids. Floating behavior still under investigation to optimize the buoy for use on major landfall positions.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 0 Lbs.

Buoy Draft: 25.92 Ft.

Overall Buoy Length: 53.22 Ft.

Focal Height of Light: 22.97 Ft.

Buoy Beam or Diameter: 11.48 Ft.

Freeboard: No Mooring: 0.00 Ft.  
Minimum: 0.00 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.00 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Aluminum  
Topmark :  
Counterweight: Steel

Coating/Coloring System:

Subdivision: 3 Compartment

Hull Type: Cylindrical

Counterweight Type: Tail Tube Ballast



## RELATED EQUIPMENT

Number of Power Sources: 2

Type of Power Sources: Solar panels and gas cylinders

Lighting Equipment: Gas Lantern

Sound Equipment:

Other Payload: Racon and Radar Reflector

Daymark Area: 0.0 Sq. Ft.

Bridle Size: Chain Size: 0.000 In.  
Length : 0.0 Ft.

Mooring Line: Size: 0.000 In.  
Type:

Sinker Size: 0 Lbs.

Topmark Type:

Number of Padeyes: 2

## OPERATING CHARACTERISTICS

Operating Environment: EM

Nominal Visual Range of Daymark: 3.7 Nmi.

Radar Range: 0.0 Nmi.

Maximum Current: 0.0 Kts.

Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.

Reflective Material Type:

## ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

## Maintenance Notes:

Maintenance-free term of duty of more than one year is sought with this buoy.

## Special Features:

This buoy can be both assembled and disassembled while afloat and the three components (hull, superstructure, and tail tube) can be separately handled by existing buoy tenders.

## Stability Notes:

Excessive tilt (up to 30 degrees) has been recorded.

## General Notes

Solar energy is stored in a battery which provides power.

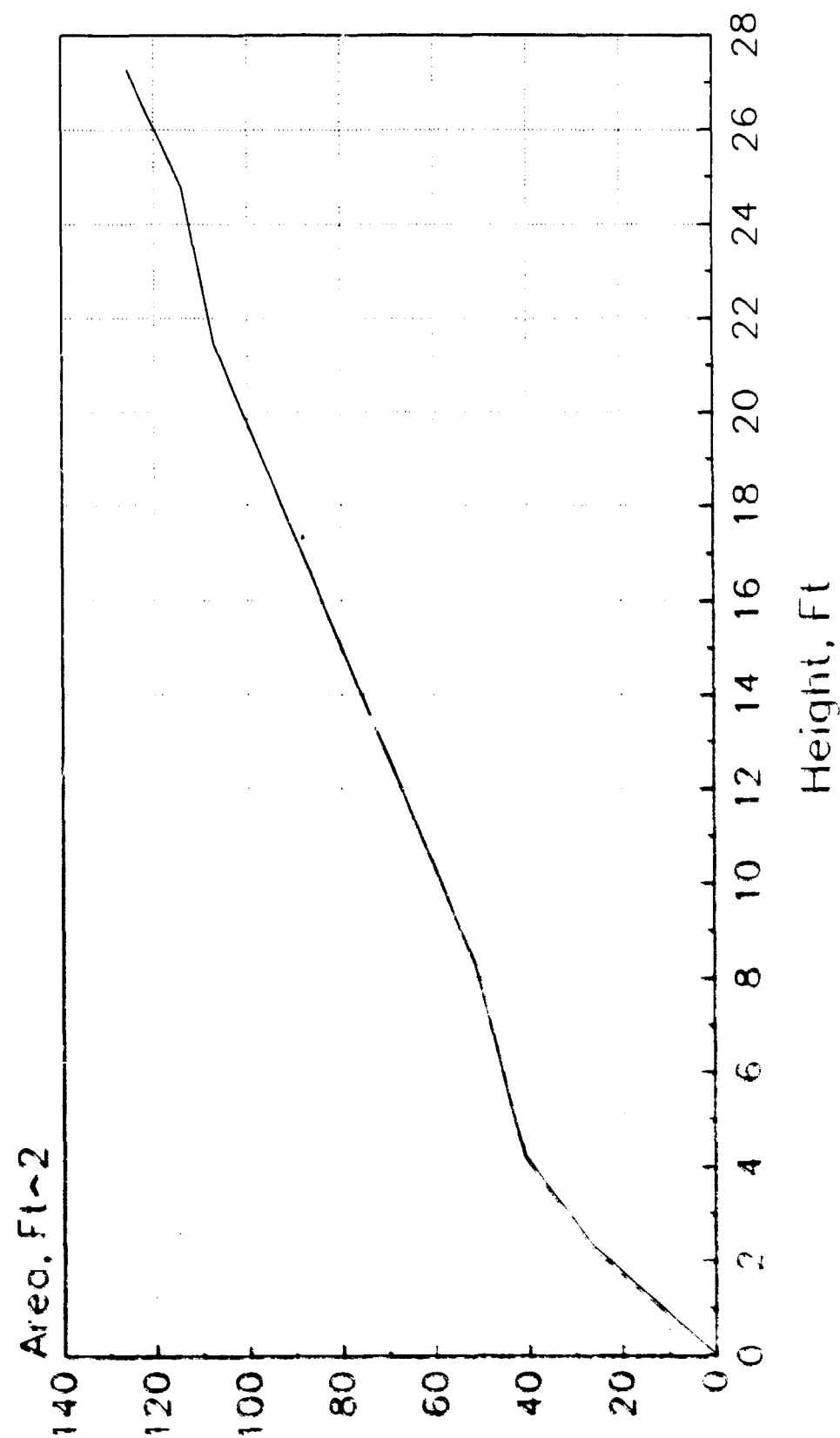
Manufacturers:                            Fed. Waterways Auth.

Source of Design:                        Seezeichenversuchsf1

Drawing Reference:                        Germany - 12

# Modular Buoy

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: T-86 Conical Buoy-Unlighted.

Country of Use: Germany

Function: Unlighted deepwater buoy.

Date Of Last Update For This Record: 10/30/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,150 Lbs.

Buoy Draft: 9.74 Ft.

Overall Buoy Length: 20.28 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 2.49 Ft.  
Minimum: 1.90 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.98 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylinder/Cone Bottom

Counterweight Type:

RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources:  
Lighting Equipment:  
Sound Equipment:  
Other Payload:  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 1.024 In.  
Length : 16.0 Ft.  
Mooring Line: Size: 0.000 In.  
Type: 1.024 Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 5.1 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:                    Replacement:        \$0  
                         Preparation:        \$0  
                         Monthly Servicing:    \$0

Service Life:                            0.0 Yrs.

Maintenance Interval:                    0 Mos.

Maintenance Notes:

May be moored by bridle off two side padeyes or direct line  
off bottom padeye.

Special Features:

Roll period is 4.7 sec without mooring and 3.5 sec with 100  
ft. chain from bottom eye. GM increases to 1.90 ft. for  
this case.

Stability Notes:

General Notes

Radar reflector is omnidirectional.

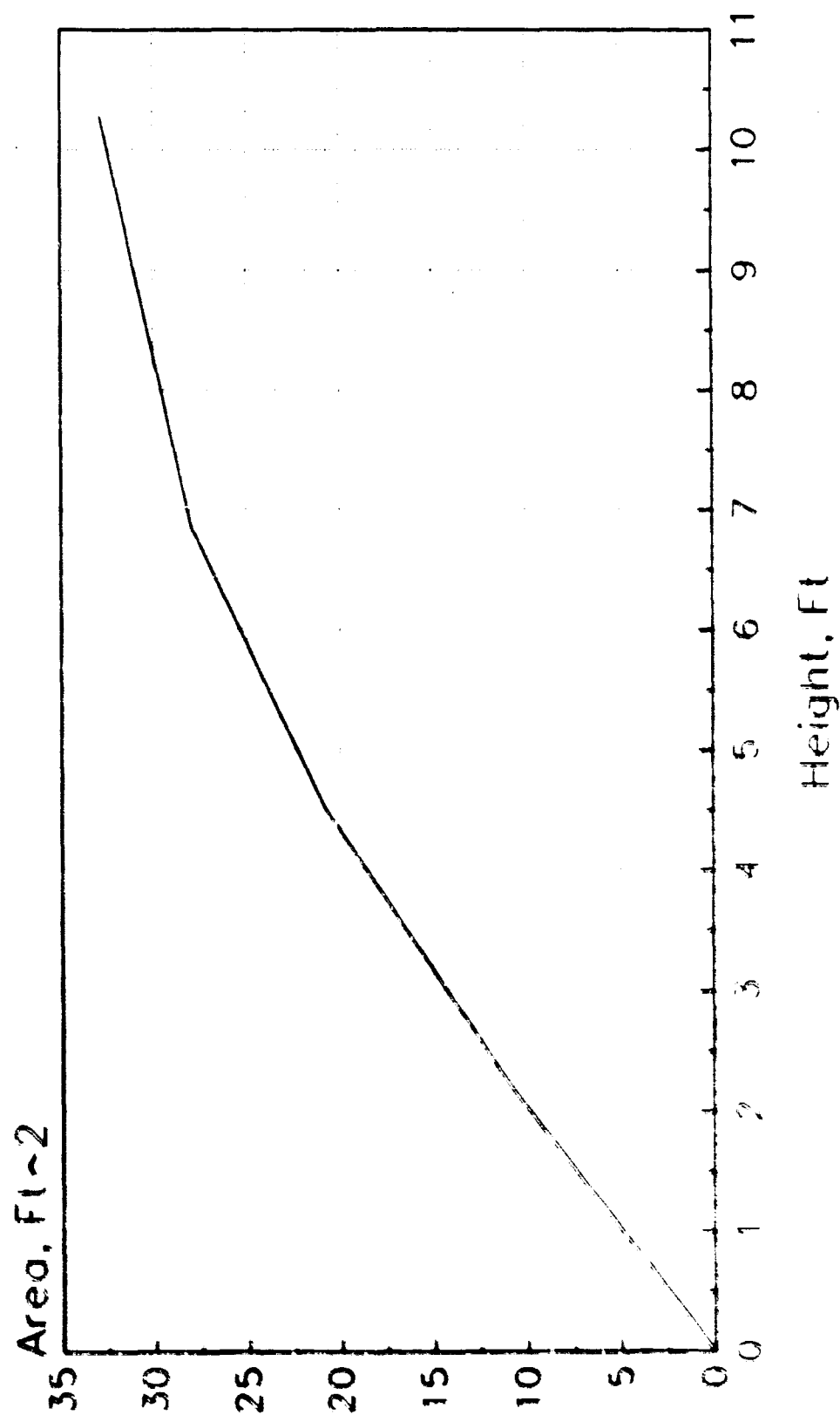
Manufacturers:                            F. Hebold

Source of Design:                        Seezeichenversuchsf

Drawing Reference:                        Germany-2

# T-86 Conical Buoy - Unlighted

Cumulative Area



## GENERAL INFORMATION

Name of Buoy: T-86 Spar Buoy-Unlighted

Country of Use: Germany

Function: Unlighted deepwater buoy.

Date Of Last Update For This Record: 11/01/90

## PHYSICAL CHARACTERISTICS

Buoy Weight: 6,170 Lbs.

Buoy Draft: 9.74 Ft.

Overall Buoy Length: 24.50 Ft.

Focal Height of Light: 0.00 Ft.

Buoy Beam or Diameter: 4.92 Ft.

Freeboard: No Mooring: 2.49 Ft.  
Minimum: 1.90 Ft.

Pounds Per Inch Immersion: 0 Lbs.

Metacentric Height: 0.72 Ft.

Reserve Buoyancy: 0 Lbs.

Wave Motion Response: Wave Following

Construction Material: Hull Shell : Steel  
Hull Filling :  
Tower : Steel  
Topmark :  
Counterweight:

Coating/Coloring System: Ordinary & fluorescent colors

Subdivision:

Hull Type: Cylinder/Cone Bottom

Counterweight Type:



RELATED EQUIPMENT

Number of Power Sources: 0  
Type of Power Sources:  
Lighting Equipment:  
Sound Equipment:  
Other Payload: Small Radar Reflector  
Daymark Area: 0.0 Sq. Ft.  
Bridle Size: Chain Size: 1.024 In.  
Length : 16.0 Ft.  
Mooring Line: Size: 1.024 In.  
Type: 1.024 Steel Chain  
Sinkers Size: 0 Lbs.  
Topmark Type:  
Number of Padeyes: 2

OPERATING CHARACTERISTICS

Operating Environment: EM  
Nominal Visual Range of Daymark: 2.5 Nmi.  
Radar Range: 5.4 Nmi.  
Maximum Current: 0.0 Kts.  
Mooring Depth: Minimum: 0 Ft.  
Maximum: 0 Ft.  
Reflective Material Type:

ADDITIONAL DATA

Cost:	Replacement:	\$0
	Preparation:	\$0
	Monthly Servicing:	\$0

Service Life: 0.0 Yrs.

Maintenance Interval: 0 Mos.

Maintenance Notes:

Special Features:

Mooring may be by bridle using two side padeyes or direct line from bottom eye.

Stability Notes:

Roll period is 6.5 sec without mooring and 4.4 sec with 100 ft. of chain from bottom. Eye-GM increases to 1.64ft for this case.

General Notes

Radar reflector is omnidirectional.

Manufacturers: F. Hebold & Others

Source of Design: Seezeichenversuchsf

Drawing Reference: Germany-1